Adelaide Wind Power Project: Year 2 Post-Construction Wildlife Monitoring Report (2016)

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Sign-off Sheet

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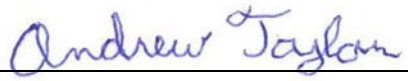
Reviewed by 
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Executive Summary

Suncor Adelaide Wind Limited Partnership (Suncor) is operating the Adelaide Wind Power Project (Adelaide) north of Strathroy, Ontario, in the Municipality of Adelaide Metcalfe in Middlesex County. The 40 megawatt facility includes 18 wind turbines, associated access roads, meteorological tower, underground collector lines, and a substation. Adelaide became fully operational on January 29, 2015.

The Renewable Energy Approval (REA) for Adelaide was issued on December 11, 2013 under the *Environmental Protection Act* section 47.3(1) (REA No. 8279-9AUP2B). Section I of the REA includes the post-construction monitoring requirements for the facility, including reporting requirements, and applicable performance measures (i.e. mortality thresholds).

An Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitat (EEMP) was prepared for Adelaide (Stantec 2012a). The EEMP details the wildlife and wildlife habitat monitoring program, which includes both pre-construction habitat use studies as well as the post-construction monitoring program. In considering both the EEMP and Section I of the REA, the Adelaide post-construction wildlife and wildlife habitat monitoring program for the first year of operation in 2015 included the following components:

- mortality monitoring for birds, bats and raptors
- disturbance monitoring for breeding amphibians

Fatalities recorded during the May - October bi-weekly mortality monitoring program included 4 raptor fatalities (2 species), 10 bird fatalities (6 species) and 36 bat fatalities (4 species). One Little Brown Myotis (*Myotis lucifugus)*, a species designated endangered both provincially and federally, was recovered in 2015.

Correcting for searcher efficiency, scavenger removal, and percent area searched, the following mortality rates were recorded at the Adelaide Wind Energy Project during the first year of monitoring in 2015:

- 0.46 raptors/turbine/year
- 0 provincially tracked raptors/turbine/year
- 2.32 small birds/turbine/year across the wind power project
  - range of 0 – 6.93 birds/turbine at individual turbines
- 8.57 bats/turbine/year

The maximum bird mortality during a single mortality monitoring survey was:

- 2 birds at any one turbine
- 2 birds (including raptors) at multiple turbines

These recorded mortality rates at Adelaide in 2015 did not exceed thresholds (MNR 2011a, 2011b; REA Section I5) for small birds, tracked raptors, or bats. However, the observed raptor mortality rate of 0.46 raptors/turbine/year exceeded the 0.2 raptors/turbine/year threshold. In accordance with the EEMP and Sections I8 of the REA, a Raptor Monitoring Plan (RMP) was created, which detailed the proposed 2016-2017 scoped mortality and cause and effect monitoring program (Stantec 2016). This plan was updated and approved by the Ministry of Natural Resources and Forestry (MNRF) in June 2016.

Disturbance studies conducted in 2015 were comprised of amphibian call count surveys at features containing significant breeding habitat (woodland and wetland) located within 120 m of Project components (e.g., substation, turbines, or access roads). Six species were recorded during these surveys: spring peeper (*Pseudacris crucifer*), western chorus frog (*Pseudacris triseriata*), American toad (*Anaxyrus americanus*), northern leopard frog (*Lithobates pipiens*), gray treefrog (*Hyla versicolor*), and northern green frog (*Lithobates clamitans*). Compared to pre-construction surveys conducted in 2013, although there was some variation in call count survey results by station, all 3 features surveyed remained significant wildlife habitat for breeding amphibians post-construction as defined by the Draft Significant Wildlife Habitat Ecoregion 7E Criterion Schedule (Ministry of Natural Resources [MNR], 2012). One year of post-construction amphibian breeding habitat monitoring is required, as detailed in the EEMP, and was fulfilled in 2015.

2016 was the second year of the post-construction monitoring program for wildlife at Adelaide, which included:

- mortality monitoring (raptors, birds and bats)
- additional monitoring for raptors in accordance with REA Section I8, as described in the RMP:
  - scoped mortality monitoring: increasing the frequency of monthly raptor monitoring at non-subset turbines to bi-monthly in May and weekly in June and July
  - cause and effect monitoring: background review (once), twice annual habitat mapping of suitable nest and foraging habitat (April, mid-May/June), behavioural monitoring weekly in June and July, and adaptive monitoring in response to a Red-tailed Hawk mortality in May

The results of this second year of monitoring are presented in this report.

Post-construction mortality monitoring was conducted for bats, birds and raptors using standard methodologies for mortality surveys, in accordance with *Bats and Bat Habitats: Guidelines for Wind Power Projects* (MNR, 2011a) and *Birds and Bird Habitats: Guidelines for Wind Power Projects* (MNR, 2011b). Bi-weekly searches were conducted at 10 turbines from May- October,

with monthly searches at all turbines for raptors May-November. Weekly monitoring at the same 10 turbine subset for raptors occurred through November.

Fatalities recorded during the May- October bi-weekly mortality monitoring program included 4 raptor fatalities (2 species), 1 bird fatality (1 species) and 11 bat fatalities (4 species). No species at risk were recovered during the bi-weekly monitoring program in 2016.

Correcting for searcher efficiency, scavenger removal, and percent area searched, the following mortality rates were recorded at the Adelaide Wind Energy Project during the second year of monitoring:

- 0.80 raptors/turbine/year
- 0 provincially tracked raptors/turbine/year
- 0.18 small birds/turbine/year across the wind power project
  - range of 0 – 1.93 birds/turbine at individual turbines
- 4.08 bats/turbine/year

The maximum bird mortality during a single mortality monitoring survey was:

- 1 bird at any one turbine
- 1 bird (including raptors) at multiple turbines

The recorded mortality rates at Adelaide in 2016 do not exceed thresholds for small birds, tracked raptors, or bats. However, the observed raptor mortality rate of 0.80 raptors/turbine/year exceeds the 0.2 raptors/turbine/year established threshold (MNR 2011a, 2011b; REA Section I5), resulting from four raptor mortalities of two species. Red-tailed Hawk (*Buteo jamaicensis*) and Turkey Vulture (*Cathartes aura*) are both ranked S5 (Secure) in the province. Most observed raptor fatality at Adelaide in 2016 occurred in the fall, a period of time typically associated with fall migration.

Scoped mortality monitoring for raptors as per the RMP occurred at all turbines twice-monthly in May, weekly in June and July, and monthly August-November. Results of these surveys were not included in the regular mortality monitoring program described above. Cause and effect monitoring included habitat mapping and behavioural surveys for Turkey Vulture, Red-tailed Hawk, and Osprey.

Results of the first year of scoped mortality and cause and effect monitoring in 2016 identified the following:

- No additional raptor mortalities were recovered during scoped mortality surveys.
- One active Red-tailed Hawk nest was identified in 2016, located within 181m of the blade sweep of turbine 12.

- Suitable nesting and foraging habitat was identified within the Project Boundary for Turkey Vultures.
- Behavioural surveys documented an apparent avoidance of turbines by Red-tailed Hawks nesting in proximity to turbine 12 although both Red-tailed Hawks and Turkey Vultures exhibited high risk behaviour (i.e., flying within blade sweep range within 200 m of turbines).
- Both Red-tailed Hawk fatalities in 2106 (May 2 and September 26) occurred within one kilometer of the Red-tailed Hawk nest. However, behavioral surveys record Red-tailed Hawk activity in proximity to the nest throughout the breeding season, suggesting the nest continued to be active.

The behavioral study concluded that an increased risk of turbine mortality may exist for raptors in proximity to active nests, although it may not be associated with the nesting pair.

The exceedance of the raptor threshold during the first and second year of monitoring triggers REA Section I10, which requires the implementation of mitigation measures in consultation with the MNRF. In addition to the previously approved programs, including the EEMP (monitoring years 2015-2017) and RMP (monitoring years 2016-2017), Stantec recommends increasing the duration of the scoped mortality monitoring as well as reporting frequency for raptors in 2017, as outlined in the addendum to the RMP. Effectiveness monitoring is recommended to occur (2018-2020) with targeted operational mitigation to commence in 2018, after all years of data have been collected to account for inter-annual variation, and continuing for the life of the project in accordance with the REA.

Monitoring in 2017 (year 3 of the EEMP monitoring, year 2 of the RMP, year one of extended RMP scope) will provide additional data and will include:

- mortality monitoring (raptors, birds and bats)
- RMP monitoring for raptors in accordance with REA Sections I8 and I10:
  - scoped mortality monitoring: increasing the frequency of monthly raptor monitoring at non-subset turbines to weekly (May-October)
  - cause and effect monitoring: twice annual habitat mapping of suitable nest and foraging habitat (April, mid-May/June)
  - behavioural surveys: weekly at active nests (if applicable) May-July
  - notifications of raptor mortalities to MNRF via online registry and email (ongoing)

Additional data from the subsequent years of mortality monitoring for the Adelaide Wind Power Project will be useful to further assess whether the results observed in the first and second years of operation (and monitoring) are representative of the facility over time.

Abbreviations

C	Corrected number of birds or bats
c	Raw number of birds or bats
CI	Confidence Interval
EEMP	Environmental Effects Monitoring Plan
GPS	Global Positioning System
KV	Kilovolt
MNRF/MNR	Ministry of Natural Resources and Forestry
MW	Megawatt
NHA/EIS	Natural Heritage Assessment and Environmental Impact Study
Ps	Percent area searched
REA	Renewable Energy Approval
RMP	Raptor Monitoring Plan
SARA	Species at Risk Act
SARO	Species at Risk in Ontario
Sc	Scavenger rate
Se	Searcher Efficiency rate
T	Turbine

1.0 INTRODUCTION

1.1 PROJECT OVERVIEW

Suncor Adelaide Wind Limited Partnership (Suncor) is operating the Adelaide Wind Power Project (Adelaide) north of Strathroy, Ontario, in the Municipality of Adelaide Metcalfe in Middlesex County. The Project Area is bound by Sexton Road to the west, Townsend Line and Wardell Road to the North, Hansford Road to the east, and Highway 402 to the south. The 40 megawatt (MW) facility became fully operational on January 29, 2015 and is comprised of 18 wind turbines, associated access roads, meteorological tower, underground collector lines, and a substation (**Figure 1**, **Appendix A**).

The Renewable Energy Approval (REA) for Adelaide was issued on December 11, 2013 under the *Environmental Protection Act* section 47.3(1) (REA No. 8279-9AUP2B).

2015 was the first year Adelaide was fully operational and was the first year of the post-construction monitoring program for wildlife.

1.2 ENVIRONMENTAL EFFECTS MONITORING PROGRAM

An Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitat (EEMP) (Stantec, 2012a) was prepared in compliance with O. Reg. 359/09, *Bats and Bat Habitats: Guidelines for Wind Power Projects* (Ministry of Natural Resources [MNR], 2011a) and *Birds and Bird Habitats: Guidelines for Wind Power Projects* (MNR, 2011b). The EEMP was approved by the MNR (MNR at the time, now Ministry of Natural Resources and Forestry (MNRF)) on July 21, 2012. The confirmation letter and EEMP for Adelaide is provided in **Appendix B**.

The purpose of the EEMP is to identify performance objectives to assess the effectiveness of the proposed mitigation measures and identify contingency measures that will be implemented if performance objectives cannot be met. A comprehensive monitoring program is required to verify the accuracy of the predicted operational impacts and address concerns regarding possible negative effects for wildlife.

In accordance with methods proposed in the EEMP and requirements of the MNRF in their confirmation letter (**Appendix B**), a pre-construction monitoring program was completed in 2013 to assess habitat use (i.e., significance) of waterfowl nesting, amphibian breeding, marsh bird breeding, and shrub/early successional bird breeding habitat. Results determined that only the amphibian breeding habitat in woodlands and wetlands met the criteria for significance. As such, disturbance monitoring for amphibian breeding habitat (woodland and wetland) was included in the post-construction monitoring program for one-year post-construction and detailed in Section I3 of the REA (**Appendix C**). The single year of disturbance monitoring was completed in 2015, the results of which are summarized below in Section 1.4.1.

In accordance with the EEMP and REA Section I3, the 2016 Adelaide Wind Power Project post-construction monitoring program included mortality monitoring for birds, bats and raptors.

Detailed performance objectives, mitigation and contingency measures for each monitoring component are provided in the EEMP (**Appendix B**). The EEMP provides thresholds for annual mortality rates of birds and bats, in accordance with the *Bats and Bat Habitats: Guidelines for Wind Power Projects* (MNR 2011a), and *Birds and Bird Habitats: Guidelines for Wind Power Projects* (MNR 2011b). The thresholds, as outlined in the EEMP and as included in the REA (Section I5), are:

- 0.2 raptors/turbine/year (averaged across the Project)
- 0.1 provincially tracked raptors/turbine/year (averaged across the Project)
- 14 birds/turbine/year (at individual turbines or turbine groups)
- 10 bats/turbine/year (averaged across Project)

Or if bird mortality during a single mortality monitoring survey exceeds:

- 10 or more birds at any one turbine
- 33 or more birds (including raptors) at multiple turbines.

1.3 RAPTOR MONITORING PLAN

In accordance with the EEMP and REA, a Raptor Monitoring Plan (RMP) was submitted with the 2015 Post-construction Monitoring Wildlife Report (Stantec 2016), detailing a scoped mortality and cause and effect monitoring program triggered by the exceedance of the provincial raptor mortality rate in 2015 (i.e., > 0.2 raptors/turbine/year; MNR 2011b). Updates to the proposed monitoring program were addressed in June 2016, with MNRF approval provided on June 23, 2016. As a result of comments received on the 2015 report, a final update was made to the reported raptor rate in the RMP in February 2017.

The approved RMP is provided in **Appendix D**.

The purpose of the RMP is to provide additional information on raptor mortality and habitat use at the Adelaide Wind Power Project. This will be used to inform and assist in establishing proposed mitigation measures for the facility. The results of the 2015 mortality monitoring program (e.g., species and survey timing) were used to guide the development of the RMP.

The RMP included the following monitoring components, proposed to supplement the 2016 and 2017 EEMP program:

- scoped mortality monitoring
- cause and effect monitoring, comprised of:
  - background records review
  - habitat mapping

- behaviour surveys at active nests (weekly, May-July)
- adaptive monitoring

1.4 PREVIOUS MONITORING PROGRAMS

A Natural Heritage Assessment and Environmental Impact Study (NHA/EIS) were completed as part of the REA application in accordance with O. Reg. 359/09 (Stantec 2012b). The NHA/EIS was confirmed by the MNRF on July 31, 2012. One subsequent addendum to the NHA (Stantec 2012c) was submitted in October 2012 and addressed modifications to the Project layout as it was presented in the original NHA. MNRF confirmation was received on October 23, 2012 for Addendum 1. Two subsequent modification memos were submitted by Stantec in February, 2013 (Stantec 2013a) and November, 2013 (Stantec 2013b) to address changes in temporary construction staging areas and underground collector-line cable locations.

As a condition of approval, pre-construction studies for amphibians were completed in spring 2013. Three features were assessed as significant, as reported to MNRF on July 4, 2013; as such, these three features were included in the EEMP monitoring.

1.4.1 Year 1 (2015)

2015 was the first year of the post-construction monitoring at the Adelaide facility. The 2015 monitoring program and results were detailed in the Adelaide Wind Power Project: Year 1 Post-Construction Wildlife Monitoring Report (2015) (Stantec, 2016).

Mortality rates in 2015 were:

- 0.46 raptors/turbine/year
- 0 provincially tracked raptors/turbine/year
- 2.32 small birds/turbine/year across the wind power project
  - range of 0 – 6.93 birds/turbine at individual turbines
- 8.57 bats/turbine/year

The maximum bird mortality during a single mortality monitoring survey was:

- 2 birds at any one turbine
- 2 birds (including raptors) at multiple turbines

Mortality rates did not exceed thresholds (MNR 2011a, 2011b; REA Section I5) for small birds, tracked raptors, or bats. However, the 2015 observed raptor mortality rate exceeded the 0.2 raptors/turbine/year threshold. In response to the exceedance and in accordance with the EEMP and Section I8 of the REA, the RMP was developed and implemented in 2016.

Disturbance studies conducted in 2015 were comprised of amphibian call count surveys at features containing significant breeding habitat (woodland and wetland) located within 120 m of Project components (e.g., substation, turbines, or access roads). Six species were recorded during these surveys: spring peeper (*Pseudacris crucifer*), western chorus frog (*Pseudacris triseriata*), American toad (*Anaxyrus americanus*), northern leopard frog (*Lithobates pipiens*), gray treefrog (*Hyla versicolor*), and northern green frog (*Lithobates clamitans*). Compared to pre-construction surveys conducted in 2013, all 3 features surveyed remained significant wildlife habitat for breeding amphibians post-construction as defined by the Draft Significant Wildlife Habitat Ecoregion 7E Criterion Schedule (MNR 2012).

2.0 METHODOLOGY

Post-construction mortality monitoring was conducted for bats, birds and raptors. Standard methodologies for mortality surveys were used, in accordance with *Bats and Bat Habitats: Guidelines for Wind Power Projects* (MNR, 2011a), and *Birds and Bird Habitats: Guidelines for Wind Power Projects* (MNR, 2011b), as detailed in the EEMP (**Appendix B**).

The purpose of the mortality monitoring program is to identify the number of birds, bats and raptor fatalities on an annual per turbine basis, averaged across the Adelaide Wind Power Project. An estimate of mortality is calculated based on the observed fatalities and adjusted for carcass removal, searcher efficiency and percent area searched.

The purpose of the RMP (i.e., scoped mortality monitoring and cause and effect monitoring; **Appendix D**) is to provide additional information on raptor mortality and habitat use associated with the Adelaide Wind Power Project. This additional information will be used to inform and assist in establishing proposed mitigation measures for the facility. The results of the 2015 mortality monitoring program (e.g., species and timing of mortalities) were used to guide the development of the monitoring programs implemented in 2016.

Survey methods for the EEMP mortality monitoring program as well as the RMP are described below.

2.1 MORTALITY MONITORING

The regular mortality monitoring program, as per the EEMP and REA, was conducted at Adelaide from May through November, 2016. The mortality monitoring consisted of:

- weekly mortality monitoring:
  - monitoring at a subset of 10 turbines (>30 % of all turbines, minimum of 10)
  - twenty-six weeks of twice-weekly monitoring for bats, birds and raptors from the beginning of May to the end of October
- monthly monitoring of all turbines for raptor mortalities from May through November
- weekly monitoring for raptors at the 10 turbine subset through November
- correction factor trials:
  - searcher efficiency testing
  - scavenger trials
  - percent area searched

2.1.1 Weekly Mortality Monitoring

Turbines included in the subset were selected via a stratified random sample to provide representative coverage of the habitats and layout of the Project area. The selected turbine subset is shown on **Figure 1, Appendix A**, and is in accordance with criteria outlined by the MNRF (e.g., >30 % of the total number of turbines is included in the subset at a minimum 10 turbines; MNR 2011a, 2011b).

Carcass searches were conducted at the subset of 10 turbines twice-weekly (i.e., at alternating three- and four-day intervals) for 26 weeks from the beginning of May through to the end of October for bats, birds and raptors. Searches continued weekly at the 10 turbine subset for four weeks through November for raptors. Carcass searches were conducted within minimally-vegetated portions (i.e., Visibility Classes 1 and 2 as per MNR, 2011a and 2011b) of a 50 m search area radius. Concentric circles spaced 5 to 6 m apart were walked, allowing for a visual search of 2.5 to 3 metres on each side of the observer. The 50 m search area radius and the radius of each concentric transects were determined using a Global Positioning System (GPS).

Weather parameters (temperature, wind speed and precipitation) were recorded on each day surveys were conducted. When a bird or bat carcass was discovered, the following information was recorded:

- searcher ID
- species
- turbine number
- date and time it was found
- sex (if possible to determine)
- forearm length (applicable only to bat fatalities)
- UTM coordinates
- state of decomposition (see **Table 2.1, Appendix E**)
- estimated days since death
- injury sustained (if applicable)
- distance and direction from the nearest turbine
- substrate upon which the carcass was found
- visibility class (see **Table 2.2, Appendix E**)

Carcasses found in the field were photographed and collected for confirmation of species. For bat specimens, a measurement of forearm length was taken using a digital caliper to assist in species identification. Suitable carcasses (i.e., those in reasonable condition) were later used in searcher efficiency or scavenger trials, excluding species at risk (i.e., threatened or endangered federally or provincially).

2.1.2 Raptor Mortality Monitoring

For the purposes of this post-construction monitoring and reporting of results, "raptors" refers to Osprey (family Pandionidae), hawks and eagles (members of the family Accipitridae), falcons (members of the family Falconidae), and vultures (members of the family Cathartidae). Raptors determined to be of conservation concern by the MNRF Natural Heritage Information Center are described as tracked raptors, which in the province of Ontario include: Bald Eagle (*Haliaeetus leucocephalus*), Golden Eagle (*Aquila chrysaetos*), Rough-legged Hawk (*Buteo lagopus*), and Peregrine Falcon (*Falco peregrinus*).

Two raptor mortality monitoring programs were undertaken at the Adelaide Wind Power Project in 2016, comprised of the second year of the regular mortality monitoring program, as detailed in the EEMP, and the first year of the scoped mortality monitoring program for raptors, as described in the RMP (**Appendix D**). Methods for these monitoring programs are described below.

2.1.2.1 Raptor Monitoring (EEMP)

In addition to the weekly mortality monitoring program, supplemental raptor mortality monitoring was conducted at the remaining 8 turbines that were not included in the regular mortality monitoring subset. Each turbine was searched once a month in May through November within 50 m of turbines by walking in concentric circles. Surveys focused on large-bodied birds, and as such were often completed quicker than weekly monitoring described above.

During the month of November, in the absence of the bi-weekly regular mortality monitoring, weekly surveys at the 10 turbine subset were conducted as described above. The frequency of these surveys are conducted in accordance with *Birds and Bird Habitats: Guidelines for Wind Power Projects* (MNR 2011b) to account for the potential continued presence of raptors passing through the area during migration.

2.1.2.2 Raptor Monitoring (RMP)

Scoped mortality monitoring, as detailed in the RMP, is an extension of the EEMP raptor monitoring program described above. EEMP non-subset turbines were surveyed bi-monthly in May, and then increased to weekly in June and July. This variable timing was due the implementation of a bi-monthly protocol, updated to weekly as requested by the MNRF during their review of the RMP in June 2016. Survey timing was chosen to coincide with the breeding period of the targeted raptor species (i.e., May-July).

The RMP mortality monitoring were conducted using the EEMP protocol and using the same 50m search radius. Because the scoped mortality monitoring was not intended to provide an estimate of mortality, but rather to help identify risk factors and inform mitigation measures, the results were not included in the calculation of thresholds. However, scavenger trials for raptors were undertaken to determine what level, if any, of removal of raptor carcasses occurred.

2.1.3 Correction Factors

Data to calculate correction factors for searcher efficiency and scavenging rates were collected during the mortality monitoring program. Correction factors were calculated to account for carcasses that fell in areas that were not searched, for carcasses that were overlooked, and for carcasses that were removed by scavengers prior to the search.

2.1.3.1 Searcher Efficiency Trials

Searcher efficiency trials are designed to correct for carcasses that may be overlooked by searchers during the field surveys. The MNRF (MNR 2011a, 2011b) provides guidance for determining searcher efficiency, expressed as a proportion of carcasses expected to be found by individual searchers.

Searcher efficiency trials consisted of blind tests, where a "tester" placed bird or bat carcasses within the 50 m radius circle under turbines prior to the carcasses search. These were discretely marked (i.e. with thread, or small tags, always placed beneath the carcass and out of sight). The "searcher" was unaware when or where trial carcasses would be placed. Trial carcasses consisted of native birds or bats. Bats were used for 52 % of trial carcasses (32 of a total of 62 placed and not scavenged). The location of placed trial carcasses were checked at the end of the searcher monitoring surveys and any remaining carcasses were collected.

Trials adhered to seasonality requirements detailed in the EEMP and MNRF (2011a, 2011b) guidance with a minimum of 10 carcasses used for each searcher per visibility class per season. No more than 3 carcasses were placed at any one time to avoid bias.

For each searcher efficiency trial, the following information was recorded per tester:

- tester and searcher
- turbine number
- date and time placed
- species
- UTM
- direction and distance from the nearest turbine
- marker type used
- carcass condition
- ground cover and visibility class (**Table 2.2, Appendix E**)
- carcass outcome (found, overlooked or scavenged)
- time when the carcass was recovered (if overlooked but not scavenged)

Individual searcher efficiencies (Se) were calculated using the following equation:

$$Se = \frac{number\ of\ test\ carcasses\ found}{(number\ of\ test\ carcasses\ placed) - (number\ of\ test\ carcasses\ scavenged)}$$

Where two surveyors conducted mortality monitoring during the same season, it was necessary to establish a weighted average that reflected the relative proportion of turbines that each technician surveyed.

The weighted average and overall Se was calculated as follows:

$$Se_o = Se_1\left(\frac{n_1}{T}\right) + Se_2\left(\frac{n_2}{T}\right) + Se_3\left(\frac{n_3}{T}\right) + \ \ldots$$

where:

Se_0	is the Overall Searcher Efficiency
$Se_{1, 2, 3\ldots}$	are Individual Searcher Efficiency Ratings
$N_{1,2,3\ldots}$	are the number of turbines surveyed by each searcher
T	is the total number of turbines surveyed

Searcher efficiency values are known to be much higher for large-bodied versus small-bodied birds (i.e. Erickson et al., 2003; Johnson et al., 2003). As a result, the Se for raptors is assumed to be 1.0 and thus was corrected separately from other bird fatalities.

2.1.3.2 Scavenger Trials

Scavenger trials are designed to correct for carcasses that are removed by scavengers before the search period. These trials involved the placement of carcasses at wind turbines followed by scheduled monitoring to determine the rate of removal. Trial carcasses were discretely marked to clearly differentiate them from turbine-related mortalities.

A scavenger trial was conducted each month in May through October. At least 10 carcasses were used each month, consisting of native birds or bats that were thawed at the time of placement. Bats were used for 38% (23 of 60) of all scavenger trial carcasses, which exceeds the one-third (33%) requirement (MNR 2011a, 2011b). Raptors comprised 8% (5 of 60) of all scavenger trial carcasses, increased from 0 in 2015, as requested by the MNRF during their review of the RMP (**Appendix D**).

Five carcasses were placed at any one time, distributed at different turbines. The following information was recorded for each carcass placement:

- turbine number
- date scavenger carcass was placed
- UTM of carcass location
- direction and distance from turbine
- visibility class (**Table 2.2**)
- species

Monitoring of each scavenger trial carcass then took place twice weekly for a 2-week period. During each monitoring event, the following records were taken:

- date
- weather conditions
- presence/absence of carcass
- condition of the carcass, if present

Separate scavenger corrections were calculated for each month of the monitoring period, calculated as follows:

$$Sc = \frac{n_{visit\ 1} + n_{visit\ 2} + n_{visit\ 3} + n_{visit\ 4}}{n_{placed} + n_{visit\ 1} + n_{visit\ 2} + n_{visit\ 3}}$$

where:

Sc is the proportion of carcasses not removed by scavengers over the survey period

n_{placed} is the total number of carcasses placed

$n_{visit1,2...}$ are the number of carcasses remaining on visits 1 through 4

Scavenger rates for raptors are assumed to be 1.0 based on their longer persistence in the environment (Morrison 2002). Therefore, raptor mortality rates were corrected separately from other bird fatalities.

2.1.3.3 Proportion of Area Surveyed

In accordance with MNRF guidelines (MNR 2011a, 2011b), a 50 m radius around the base of turbines was searched. This area represents the maximum recommended search area. However, due to thick or tall vegetation, it was not always possible to search the entire 50 m radius. Therefore, a correction factor was applied to account for portions of the 50 m radius not searched.

The 50 m search radius around each turbine in the weekly monitoring subset was mapped into visibility classes (**Table 2.2, Appendix E**). Those areas in visibility class 1 and 2 (i.e. easy and moderate) were included in the weekly carcass searches while portions of the search radius in visibility classes 3 and 4 (i.e. difficult to very difficult) were not included. A GPS was used to delineate and measure the area (in meters squared) of visibility class 1 and 2 that was searched.

Ps varied by turbine and survey date and thus was recorded during each survey. The Ps for each turbine was calculated on a daily basis as follows:

$$Ps_x = \frac{area\ searched\ within\ 50\ m\ radius\ circle}{total\ area\ within\ 50\ m\ radius\ circle}$$

where:

Ps = percent of area searched

X=turbine number

The average monthly Ps for the entire Project (based on 10 turbines) was calculated by averaging:

$$Ps = \frac{Ps_1 + Ps_2 + Ps_3 + \ldots + Ps_{20}}{10}$$

2.1.4 Estimate of Mortality

There are numerous published and unpublished approaches to incorporating correction factors into an overall assessment of total bird and bat mortality.

Currently, MNRF recommends the following formula:

$$C = \frac{c}{Se * Sc * Ps}$$

where:

C	is the corrected number of bird or bat fatalities
c	is the number of carcasses found
Se	is the proportion of carcasses expected to be found by searchers (searcher efficiency)
Sc	is the proportion of carcasses not removed by scavengers over the survey period
Ps	is the percent of the *area surveyed*

To account for seasonal variability, bird and bat fatalities were estimated separately in each month from May through October. The corrected estimates of bird and bat fatalities were summed over the monitoring period to obtain the estimated number of fatalities for the entire monitoring period. In accordance with provincial guidelines, raptor mortality rates were calculated separately from the bird fatality rate. Estimated mortality rates were expressed per turbine and per MW by dividing the corrected estimates of bird or bat fatalities by the number of turbines or MW in the monitoring subset (i.e., 10 turbines, or 22 MW).

Estimated raptor mortality rates were based on the results of the May to October weekly mortality monitoring surveys. All raptors recovered during these weekly searches are included in calculating the corrected number of raptor fatalities/turbine/year. If applicable, tracked raptors (e.g., any Bald Eagle, Golden Eagle, Peregrine Falcon, or Rough-legged Hawks) are separated from the remainder of the raptor fatalities to calculate the corrected number of tracked raptor fatalities/turbine/year. Results of the supplementary raptor mortality monitoring (i.e., EEMP and RMP) are reported separately, for the purpose of identifying individual or groups of turbines that may exceed the mortality thresholds. This is in accordance with provincial guidance and as such any raptor fatalities discovered incidentally or during the supplementary monitoring are not included in the raptor (all and tracked) corrected fatality calculations.

For the purposes of applying mortality thresholds, estimated mortality rates were calculated on a per turbine basis for birds. To facilitate this calculation, the average, monthly percent area searched was used for each individual turbine. Monthly searcher efficiency and scavenger rates were considered consistent across all turbines.

2.2 CAUSE AND EFFECT MONITORING PROGRAM

The focus of the cause and effect monitoring undertaken in 2016 was to identify any potential concentration areas and preferred habitat around operational turbines to determine any features that may be increasing the risk of mortality for targeted raptors (Red-tailed Hawk, Osprey and Turkey Vulture).

Cause and effect monitoring consisted of the following components:

- Background review of the Project Boundary (**Figure 2a**, **Appendix A**).
- Habitat mapping (nesting, foraging, incidental) of the Raptor Study Area (**Figure 2a, Appendix A**).
- Behavioural surveys at the identified Red-tailed Hawk nest (**Figure 2b, Appendix A**).
- Adaptive monitoring at the identified nest.

2.2.1 Background Review

A background review was conducted to identify previously unknown or new nesting occurrences documented within the Adelaide Project Boundary (**Figure 1**, **Appendix A**). Review sources included: eBird, NatureCounts, the local Field Naturalists Club, and Land Information Ontario (LIO) data.

2.2.2 Habitat Assessment

Species-specific habitat mapping was completed on April 15, 2016 and June 15, 2016 within 1 km of each turbine located within the facility (i.e., Raptor Study Area, **Figure 2a, Appendix A**). The April survey date was chosen to coincide with optimal forest visibility conditions for nest searching prior to leaf-out. The follow up June survey date targeted foraging habitat and incidental observations as visibility for nesting habitat was greatly reduced.

In an effort to target potential Osprey nesting sites, the Parkhill Conservation Area, located approximately 15 km north of the Adelaide Wind Power Project, was included in the April 15, 2016 survey. Personnel and survey conditions are provided in **Table 2.3, Appendix E**. Results of the background review were checked in the field during habitat mapping (see Section 3.2.2).

All municipal and access roads were travelled within the Study Area. Habitat mapped included:

- nesting habitat (barns and abandoned buildings for Turkey Vultures, bulky stick nests for Red-tailed Hawks, and platform nests for Osprey)
- foraging habitat (carrion for Turkey Vultures, grasslands and meadows for Red-tailed Hawks, and waterways for Osprey)

Incidental observations of all raptor species was recorded, including details on location, species, number of individuals, behaviour, and flight height.

2.2.3 Behavioural Surveys

Behavioural surveys were conducted at one active Red-tailed Hawk nest in 2016, identified during the habitat mapping survey conducted on April 15, 2016. These surveys were conducted for 2 hours from a stationary survey location, using a spotting scope, weekly throughout the months of June and July. One survey was conducted in May, prior to increasing the frequency of the surveys in consultation with the MNRF. The nest is located in proximity to turbine 12, and is shown on **Figure 2b** (**Appendix A**).

Details recorded during behavioural surveys included:

- survey date and time
- weather conditions
- field personnel
- nest activity
- raptor movement
- raptor behaviour (including duration)
- flight paths

Dates the behavioural monitoring occurred are provided in **Table 2.3, Appendix E**.

2.2.4 Adaptive Monitoring

Adaptive monitoring was conducted at the Red-tailed Hawk nest included in the behavioural monitoring on May 12, 2016. This occurred after a Red-tailed Hawk mortality was documented on May 2, 2016 at nearby turbine 12. This included a follow-up nest check to determine if the observed mortality was an individual from the nearby nest or an unrelated individual.

3.0 RESULTS

Results of the second year of mortality and first year of raptor cause and effect monitoring for the Adelaide Wind Power Project are provided below.

3.1 MORTALITY MONITORING

Results of the mortality monitoring for the 2016 field program are summarized in **Tables 3.1-3.13, Appendix E.** Raw data from the mortality monitoring is provided in **Appendix F**.

Bi-weekly bird and bat mortality monitoring took place between May 2 and October 27, 2016. Monitoring continued weekly through November for raptors. A complete summary of survey dates, times, and weather conditions during the carcass searches is provided in **Appendix F1** for the bi-weekly monitoring program and **Appendix F2** for the raptor-specific surveys (EEMP and RMP mortality programs). Although all reasonable effort was made to conduct surveys as scheduled, surveys were not conducted if weather (e.g. lightning, severe fog) or site work (e.g., farming, turbine, or access road maintenance) presented safety concerns. **Appendix F3** and **Appendix F4** summarize instances where turbine searches were not conducted due to weather or other safety concerns.

Field forms for the mortality monitoring program, including correction factor trials, are provided in **Appendix G1**.

3.1.1 Searcher Efficiency Trials

The 2016 mortality monitoring program was conducted in spring and summer (May-August) by one searcher, with a second searcher conducting all surveys during the fall months (September-October). In 2016, the overall weighted searcher efficiency values for each season were: 62 % (spring), 80 % (summer) and 43 % (fall) (**Table 3.1, Appendix E**).

Raw data for the searcher efficiency trials are provided in **Appendix F5** and summarized in **Appendix F6**.

3.1.2 Scavenger Trials

The results of the seasonal scavenger trials are summarized in **Table 3.2, Appendix E**. The proportion of carcasses not removed by scavengers remained relatively consistent over the entire survey period; lowest at 76 % in the fall to 79 % in the spring and highest at 84 % during the summer months.

Raw data for the scavenger trials are provided in **Appendix F7** and summarized in **Appendix F8.**

3.1.3 Proportion of Area Searched

The proportion of the 50 m radius that was searched at each turbine is summarized by month in **Table 3.3**, **Appendix E**.

The average search area generally decreased over the monitoring period, highest in May at 97 %, decreasing slightly but consistent in June and July (80-83 %), again gradually decreasing in August (70 %), and lowest in the fall (43-58 %).

Raw data for the proportion of area searched are provided in **Appendix F9** and summarized in **Appendix F10.**

3.1.4 Mortalities

Details of all recorded bird and bat fatalities identified during the regular weekly mortality monitoring program (May 2-October 27, 2016) are provided in **Appendix F11**. Details of all fatalities recovered during the monthly raptor mortality monitoring programs as well as incidentally (i.e., outside regular search parameters or by maintenance staff) are provided in **Appendix F12**.

3.1.4.1 Raptor Monitoring

Results of the EEMP and RMP raptor mortality monitoring programs are detailed below.

3.1.4.1.1 Raptor Monitoring (EEMP)

Four raptor fatalities were recovered during the 26-week bi-weekly monitoring program, including 2 Red-tailed Hawks and 2 Turkey Vultures. A single Red-tailed Hawk mortality occurred in May, with the remaining raptor mortalities occurring during the month of September (**Figure 3, Appendix A, Table 3.4, Appendix E**). Spatial distribution of mortalities appeared to be clustered by species, with both Red-tailed Hawk fatalities located in proximity to one another (turbines 11 and 12) and both Turkey Vulture mortalities located in proximity to one another (turbines 20 and 22). Raptor mortalities by turbine is shown on **Figure 4** (**Appendix A**).

All species are ranked S5(B), secure and common in the province year-round or during the breeding season (B).

Correcting for percent area searched, as searcher efficiency and scavenger rates are assumed to be 1.0 for large-bodied birds, these 4 fatalities were corrected to 0.80 raptors/turbine /year (0.37 raptors/MW/year; **Table 3.5, Appendix E**). Fatality summaries are provided in **Appendix F11**.

No raptors were recovered during the monthly searches at the 8 non-subset turbines (May-November) nor the weekly surveys conducted at the turbine subset during the month of November.

No tracked raptor fatalities were recovered during the EEMP and RMP (see Section 3.1.4.1.2) mortality monitoring programs in 2016.

3.1.4.1.2 Raptor Monitoring (RMP)

No raptors were recovered during the scoped RMP mortality monitoring program, conducted at non-subset turbines weekly in June and July. Field forms for the RMP are provided in **Appendix G2**.

As detailed in the RMP, scavenger trials for raptors were undertaken to determine what level, if any, of removal of raptor carcasses occurred. Five raptors carcasses were used in the RMP trail. The average proportion of carcasses not removed by scavengers for the raptor trials was 75%, with 3 carcasses persisting throughout the trial (100%), 1 carcass persisting for a week and a half (75%) and 1 carcass was removed immediately following deployment (0). Based on these results, carcass removal during the RMP was anticipated to be very low. Raptor specific scavenging rates were used for the sole purpose of the RMP, as to not affect standardized EEMP protocols.

3.1.4.2 Bird Mortality

One small bird fatality (i.e., excluding raptors) of a single species was recorded during the 26-week monitoring period from May through October, summarized in **Table 3.7, Appendix E.** Full fatality details are provided in **Appendix F11**. The recovered bird mortality, a European Starling (*Sturnella vulgaris*), is non-native to the province and as such is not provincially ranked (SNA).

The maximum number of bird fatalities (including raptors) recovered during a single mortality monitoring survey at any one turbine was 1. The maximum number of bird mortalities at all turbines in any one day was also 1 one (including raptors).

The single European Starling mortality occurred on July 4, 2016 at turbine 20, as shown on **Figures 3** and **4** (**Appendix A**).

Correcting for searcher efficiency, scavenger removal, and percent area searched, turbine specific rates ranged from 0 birds/turbine to 1.93 birds/turbine (**Table 3.8, Appendix E**). Averaged across the entire facility, the recovered carcass resulted in a corrected value of 0.18 bird fatalities/turbine/year (1.05 birds/ MW/year) (**Table 3.9, Appendix E**).

The recorded mortality rates for the second year of post-construction mortality monitoring at the Adelaide Wind Power Project did not exceed thresholds detailed in Section I5 of the REA for small birds,(i.e., 14 small birds/turbine/year, 10 small birds/turbine/monitoring event, 33 small birds and raptors/monitoring event) or tracked raptors.

One species at risk bird mortality was recovered incidentally. A male Bobolink (*Dolichonyx oryzivorus*) was recovered at turbine 17 on May 12, 2016 (**Table 3.6, Appendix E**). Bobolink is ranked as SB4 in the province (Apparently Secure while breeding) but is designated as Threatened provincially under the Endangered Species Act. This fatality is not included in the mortality calculations as it was recovered outside the bi-weekly mortality monitoring parameters. Full survey details are provided in **Appendix F12**.

3.1.4.3 Bat Mortality

A total of 11 bat fatalities representing 4 species were recorded during the 26-week monitoring period from May through October, summarized in **Table 3.10, Appendix E.** Full survey results are available in **Appendix F11.**

The distribution of bat fatalities over the monitoring period is shown on **Figure 3** (**Appendix A**). Bat fatalities were concentrated between the end of July and early-October. October 6th had the highest number of daily bat fatalities (2 mortalities), followed by individual mortalities on the remaining 10 dates (*see* **Appendix F11**).

Bat fatalities were highest at turbine 11 (4 fatalities), followed by turbines 20 and 22, each with 2 mortalities each. Turbines 7, 12, and 14 experienced individual mortalities at each while the remaining turbines in the survey subset did not experience any mortality events throughout the full 26-week monitoring period (**Table 3.11, Appendix E**; **Figure 4, Appendix A**).

Silver-haired Bat (*Lasionycteris noctivagan*) was the most common species found, representing 55 % of all bat fatalities. Hoary Bat (*Lasiurus cinereus*) was the next most abundant (27 %), followed by identical results for Big Brown Bat (*Eptesicus fuscus*) and Red Bat (*Lasiurus borealis*) at 9 % each. All species have provincial S-Ranks of S5 (Secure – common, widespread and abundant in Ontario) or S4 (Apparently Secure – uncommon but not rare).

Correcting for searcher efficiency, scavenger removal, and percent area searched, the 11 recovered carcasses resulted in a corrected value of 4.08 bat fatalities/ turbine/year (1.85 fatalities/MW/year; **Table 3.12, Appendix E**).

Three additional bat fatalities were recovered incidentally during supplemental raptor searches or by maintenance crews. This includes 2 Hoary Bats and 1 Silver-haired Bat (**Table 3.6, Appendix E**). These fatalities are not included in the mortality calculations as they were recovered outside the bi-weekly mortality monitoring parameters.

No bat species at risk were recovered incidentally nor during any of the mortality monitoring programs conducted at the Adelaide Wind Power Project in 2016.

3.1.5 Notifications

As detailed in the EEMP and REA Condition E12(2), notifications were made to MNRF when any species at risk (provincially threatened or endangered) were recovered during the mortality program. Notifications were also made to the MNRF when any raptor species were recovered. Both types of mortalities were registered on the Ontario government online registry to allow the possession of dead wildlife.

Five notifications were made for individuals recovered during the 2016 monitoring program, 4 for raptor fatalities and 1 for a species at risk fatality. Copies of each notification are provided in **Appendix H.**

Raptor notifications included the following:

- Red-tailed Hawk fatality on May 3, 2016 at turbine 12
- Turkey Vulture mortality on September 20, 2016 at turbine 20
- Red-tailed Hawk mortality on September 26, 2016 at turbine 11
- Turkey Vulture fatality on September 29, 2016 at turbine 22

Species at risk notifications included the following:

- Bobolink fatality on May 16, 2016 at turbine 17

3.1.6 Summary

The following mortality rates occurred at the Adelaide Wind Power Project during the second year of monitoring conducted in 2016:

- 0.80 raptors/turbine/year
- 0 provincially tracked raptors/turbine/year
- 0.18 small birds/turbine/year across the wind power Project
  - range of 0 – 1.93 birds/turbine at individual turbines
- 4.08 bats/turbine/year

The maximum bird mortality during a single mortality monitoring survey was:

- 1 bird at any one turbine
- 1 bird (including raptors) at multiple turbines

3.2 CAUSE AND EFFECT MONITORING

Results of the cause and effect monitoring program, as prescribed in the RMP, are summarized below.

3.2.1 Background Review

Project Nestwatch data (obtained from NatureCounts) identified one Red-tailed Hawk nest within the Adelaide Project Boundary (**Figure 5, Appendix A**). This nest was documented in 1968 and is located approximately 1 km south of turbine 22. No Turkey Vulture nest records were identified during the background review.

Both eBird and the Ontario Breeding Bird Atlas documented Red-tailed Hawk and Turkey Vulture occurrences within the Project Boundary. These datasets do not provide specific nest location data, however; these data indicate that both Red-tailed Hawks and Turkey Vultures nest within the 10 x 10 km squares that overlap with the Adelaide Wind Power Project. Osprey were not identified in either dataset as occurring within the Project Boundary.

The LIO nesting sites layer did not identify any stick nests within the Adelaide Project Boundary.

3.2.2 Habitat Assessment

Results of the habitat mapping surveys conducted on April 15, 2016 and June 15, 2016 are summarized below. Field forms for the RMP are provided in **Appendix G2**.

3.2.2.1 Nesting Habitat

One active Red-tailed Hawk nest was identified within the Raptor Study Area. This nest is in 235 m from the base of turbine 12 (181 m from blade sweep) and is shown on **Figure 2b** (Appendix A). This nest was the basis for the behaviour surveys (detailed in Section 3.2.3). An additional inactive Red-tailed Hawk nest was noted within the Study Area during surveys, located within the woodlot south of turbine 9. This nest is shown on **Figure 5** (**Appendix A**).

No nests were identified for Osprey or Turkey Vultures within the Study Area during habitat mapping surveys, however; suitable nesting sites (e.g., barns) were documented for Turkey Vultures.

3.2.2.2 Foraging Habitat

The landscape within the Raptor Study Area is primarily agricultural. As such, foraging habitat was present for both Turkey Vultures (roadkill, livestock operations) and Red-tailed Hawks (pastures and hayfields) and is foundthroughout the Study Area.

No foraging habitat for Osprey (i.e., waterways) was documented within the Study Area.

3.2.2.3 Incidental Observations

All incidental raptor observations are summarized in **Table 3.13** (**Appendix E**). A total of 33 Turkey Vultures and 4 Red-tailed Hawks were observed over both survey dates throughout the Project Boundary, with behaviour typically associated with hunting (i.e., soaring, perching). No Osprey were observed.

3.2.3 Behavioural Surveys

Behavioural surveys were conducted at the Red-tailed Hawk nest, which was located 181 m from the blade tip of turbine 12 (**Figure 6, Appendix A**). Surveys occurred once in the month of May, and weekly in June and July, with additional raptor observation notes recorded during the April 15th habitat assessment. Adult Red-tailed Hawks were documented on or near the nest between April 15 and June 20, 2016, then again foraging in the area of the nest on July 4th. No juvenile birds were recorded during surveys, however nest visibility was obscured after the May 15, 2016 visit. As such, juveniles in the nest would not have been visible.

Flight paths recorded on June 6, June 20, and July 4, 2016 consistently involved adult birds circling the woodlot, with approaching or leaving the nest location generally to/from the south side of the woodlot (one exception, June 6th to the north), as shown on **Figure 6** (**Appendix A**). Flight heights were generally at or below turbine blade sweep range (i.e., blade sweep is 45-155 m).

Results of the behavioural monitoring conducted at the Red-tailed Hawk nest at turbine 12 are summarized in **Table 3.14** (**Appendix A**).

3.2.4 Adaptive Monitoring

A check of the Red-tailed Hawk nest occurred on May 12, 2016, following the recovery of an adult Red-tailed Hawk mortality at turbine 12 on May 2, 2016. As described above in Section 3.2.3, the nest continued to be active after this mortality was recovered.

4.0 DISCUSSION

A review of results, a comparison to published literature and 2015 results, as well as a discussion on observed patterns, if applicable, of the second year of mortality and first year of cause and effect monitoring at the Adelaide Wind Power Project are provided in the sections below.

4.1 MORTALITY MONITORING

Results presented in this 2016 post-construction monitoring report have provided the second of three years of mortality monitoring data, providing insight into the trends that were observed in 2015. The thresholds in 2016 were not exceeded for tracked raptors, small birds, single mortality events, or bats; however, the raptor threshold was exceeded (>0.20 raptors/turbine/year).

Details on search parameters, results and any observed fatality patterns are provided below.

4.1.1 Searcher Efficiency Trials

Average rates in Canada for searcher efficiency are 64-70 % (BSC et al. 2016). Spring and summer rates at the Adelaide facility (62 and 80 %) are consistent with these data (**Table 3.1, Appendix E**). Fall rates were lower than these averages, likely attributable to searcher turnover and low visibility (i.e., high proportion of class 2 visibility class). Factors that are thought to influence searcher rates may be vegetation height and thickness, ground visibility, individual observer variation, and size of birds (NWCC 2010).

The same seasonal trend was documented at the Adelaide facility in 2015, highest in summer (70 % in 2015), lowest in the fall (57 % in 2015), and spring (65 % in 2015) interim between the two.

4.1.2 Scavenger Trials

Rates of carcass removal were consistent throughout the spring, summer and fall of 2016 such that 76-84 % of carcasses remained after the trials (**Table 3.2, Appendix E**). These removal rates did not show a strong seasonal variation, which is consistent with rates documented in 2015 (75-79 %) and seasonal data from wind projects across Canada (BSC et al. 2016).

4.1.3 Proportion of Area Searched

Turbine area searched was highest at the beginning of the search period (97 % in May) and decreased as crop cover increased over the growing season (i.e., June-September, 80 % to 43 %). Some crop harvesting occurred in late fall, resulting in a slightly increased search area in October (58 %; **Table 3.3, Appendix E**). This pattern is consistent with results from 2015, however; area harvesting in 2015 appeared to be more thorough, with 91 % percent of turbine areas searched in October 2015. It is expected that some of this annual variability can be attributed construction effects in year 1, with increased regeneration, particularly of agricultural weeds, experienced in 2016. Delayed or partial harvesting in 2016 due to variability in annual weather patterns may have also been a contributing factor.

4.1.4 Bird Mortality

4.1.4.1 Background

Direct mortality from collisions with wind turbines is a potential effect during operation at wind turbine facilities. Each turbine that is installed has an impact by directly adding to mortality rates (Masden et al. 2010). Whether or not this source of mortality is sufficient to impact populations is the critical issue from a conservation perspective.

Various studies have been conducted throughout North America to document bird collisions at wind facilities and to determine why and the extent to which they occur. It appears that most avian collisions are of nocturnal migratory songbirds (Kingsley and Whittam 2007, Erickson et al. 2014, AWWI 2014) based on a review of available literature, at least in part because they are the most abundant species at wind energy facilities (National Academy of Sciences 2007). In an analysis of mortality monitoring results from 116 studies at more than 70 wind energy facilities, small passerines accounted for 62.5 % of all bird fatalities, upland game birds for 8.2% and diurnal raptors for 7.8 % (Erickson et al. 2014).

BSC et al. (2016) found similar results with raptors representing 8.5% of all bird fatalities in Ontario, with Turkey Vulture (2.65%) and Red-tailed Hawk (3.80%) found most commonly. Another recent study noted that raptor fatality rates exhibit high inter-annual variation (Smallwood 2013). Considering raptor mortality alone, Strickland et al. (2011) reported raptor fatality rates ranging from 0 to 0.49 raptors per MW, with a median of 0.8 raptors per MW, at projects across North America that used modern, monopole turbines.

The most common species of small passerine reported across several North American studies are Horned Lark (*Eremophila alpestris*), along with Red-eyed Vireo (*Vireo olivaceus*), and Golden-crowned Kinglet (*Regulus satrapa*; BSC et al. 2016, Erickson et al. 2014, Zimmerling et al. 2013). In Canada the overall estimated mortality of these species represents less than 0.01% of their Canadian populations (Zimmerling et al. 2013).

Most fatalities at operational facilities have been found from May through October (Erickson et al. 2014, Bird Studies Canada et al. 2016), with the fall migration period (August to October) exhibiting the majority of all fatalities (Environment Canada et al. 2011, Erickson et al. 2014).

The most recent compilation of available bird mortality data from wind energy facilities in North America (Erickson et al. 2014) indicates a bias-corrected estimate of overall bird mortality rate between 2.10/MW/year and 3.35/MW/year. These values are within the range reported by AWWI (2014) of 3 to 5 birds/MW/year.

Zimmerling et al. (2013) report an average of 8.2 birds (+/- 1.4, 95 % confidence interval [CI]) killed per turbine per year at 43 wind farms in Canada. This study used a correction factor to increase the radius around turbine from the standard 50 m to 85 m, based on results of an unpublished study by the authors.

The most recent Ontario data, compiled by Bird Studies Canada et al. (2016), indicate an average of 6.14 birds (+/- 0.31, 95% CI) killed per turbine per year based on data from 46 wind farms in Ontario. This compilation used a 50 m search radius in the mortality correction as this method is standard practice across many Canadian studies, and is the mandatory search radius for all projects currently being monitored in Ontario (BSC et al. 2016).

Bird mortality rates observed at operational facilities are considered low, with no evidence of large scale fatality events or significant population impacts in Ontario (Friesen 2011). Monitoring results to date from operational facilities indicate that wind turbines are a small contributor to overall bird mortality when compared to other anthropogenic structures and industrial sectors (Arnett et al. 2007, Kingsley and Whittam 2007, National Academy of Sciences 2007, Kerlinger et al. 2011, Zimmerling et al. 2013) or other sources of anthropogenic mortality (Calvert et al. 2013). Because raptors have relatively low population densities and reproductive rates, population recovery from mortality effects can be slow (Kingsley and Whittam 2007). As such, raptors may be more susceptible to population level impacts than other bird species (Manville 2009, as referenced in Zimmerling et al. 2013).

Zimmerling et al. (2013) indicate that even a tenfold increase in total mortality from wind turbine operation in Canada would represent a mortality level that is orders of magnitude smaller than from many other sources of collision mortality in Canada. Less than 0.01 % of the continent-wide population for most species is estimated to be killed annually by collisions with wind turbines (Erickson et al. 2014).

4.1.4.2 Adelaide Wind Power Project

4.1.4.2.1 Raptor Mortality

A total of four raptor mortalities were reported during the second year of mortality monitoring at Adelaide in 2016. This included two Red-tailed Hawks and two Turkey Vultures, all recovered during the regular monitoring program. These raw numbers are similar to the results reported in 2015, in which four raptors were recovered during regular mortality monitoring (2 Red-tailed Hawks and 2 Turkey Vultures) but with an additional mortality was recovered during supplemental monitoring (an Osprey). To date, Red-tailed Hawks and Turkey Vultures comprise almost all raptor mortality at the Project, which is consistent with results across Ontario. The two species are the most commonly encountered raptor fatalities at Ontario wind facilities with Red-tailed Hawk comprising 3.80 % and Turkey Vulture comprising 2.65 % of all bird mortalities (BSC et al. 2016). The mortality of Red-tailed Hawk and Turkey Vulture in Ontario can likely be attributed to, at least in part, to the abundance of these species in the province.

Seasonal variability in mortality rates is typically attributed to periods where large numbers of migrating birds (including raptors) move through southern Ontario while travelling between their breeding and wintering grounds. Increases have been recorded most strongly during the fall migration period (August to October) which exhibits the majority of all bird fatalities (Environment Canada et al. 2011, Erickson et al. 2014, BSC et al. 2016). This pattern was observed in 2016 at the Project, with four of the five raptor mortalities occurred between September 20-29, 2016, a period consistent with fall migration.

The two Red-tailed Hawk mortalities in 2016 occurred in proximity to the active nest. One mortality was recovered on May 2, 2016. It was in an advanced state of decomposition and as such it is expected that the mortality occurred prior to this date (i.e., greater than 1-2 weeks). This mortality was recovered approximately 140m to an active Red-tailed Hawk nest within the breeding season. The second Red-tailed Hawk fatality occurred at turbine 11 on September 26, 2016. Turbine 11 is located just over 1 km away from the known Red-tailed Hawk nest.

A similar association may have occurred in 2015, which identified a Red-tailed Hawk mortality at turbine 11 on June 11, 2015. Further to the active nest in 2016, a second inactive nest was identified less than a kilometer away from turbine 11. It is unknown whether this nest was active in 2015 when the mortality occurred.

It is hypothesized that birds, including raptors, may be at higher risk of collision while distracted during flight (James 2010). Such distraction could occur while hunting, or during interactions with other raptors. Stantec (2011) conducted a study of raptor behavior to assess potential risk factors of wind turbine collision during spring and fall migration. The study documented interactions between resident Red-tailed Hawks and migrating hawks passing through their territory. These interactions are likely to result in distracted flight and may increase the risk of collision. Such behavior could explain the concentration of raptor mortality at the Adelaide project in September of 2016, during the fall migration period. However, this hypothesis does not explain

the concentration of raptor mortality in the breeding season of 2015. During that year, all 5 raptor mortalities occurred during a short eleven-day period in June. Factors resulting in the 2015 raptor mortality remain unclear; the 2016 behavioral studies did not provide any further insight.

The raptor mortality rates recorded in both 2015 (0.46 raptors/turbine/year) and 2016 (0.80 raptors/turbine/year; **Table 4.1, Appendix E**) were above the provincial threshold (MNRF 2011b). In response to exceeding the raptor threshold in 2015, the Raptor Monitoring Plan (RMP) was developed and implemented; a discussion of which is provided in Section 4.2. In response to exceeding the threshold in 2016 and in accordance with the EEMP and the REA (Section I10), an appropriate response plan must be prepared and implemented that includes some or all of the following measures:

- Increased reporting frequency to identify potential threshold exceedance.
- Additional behavioural studies to determine factors affecting mortality rates.
- Periodic shut-down of select turbines.
- Blade feathering at specific times of year.
- An alternative plan agreed to between the Company and MNRF.

To address these measures, an addendum to the Raptor Monitoring Plan has been prepared which outlines the measures that will be implemented in 2017 (**Appendix D**).

4.1.4.2.2 Small Bird Mortality

One European Starling was recovered during the 2016 mortality monitoring at the Adelaide Wind Power Project, corresponding to a corrected rate of 0.18 birds/turbine/year. This is a decrease from the 10 mortalities recovered in 2015 and corrected rate of 2.32 birds/turbine/year (**Table 4.1, Appendix E**). Both the 2015 and 2016 mortality rates are well below the Ontario threshold of 14 birds/turbine/year and lower than the current estimated provincial mortality rate of 6.14 birds/turbine/year (+/- 0.31, 95% CI; BSC et al. 2016.)

The European Starling mortality was recovered on July 4, 2016, which coincides with the end of the breeding bird period. This species is the 15th most commonly recovered species at Ontario wind power facilities, accounting for 1.78 % of all wind facility mortalities (BSC et al. 2016).

4.1.4.2.3 Species at Risk

One species at risk mortality, a male Bobolink, was recovered incidentally at turbine 17 on May 12, 2016. This is the first and only bird species at risk mortality at the Adelaide facility to date. Significant time had elapsed since the mortality occurred, evident by the status of the recovered carcass, which consisted solely of a deteriorated set of wings. Without body tissue, it was not possible to estimate when the collision occurred.

Bobolinks typically occur in grassland, such as hay or pasture (COSEWIC 2010) but may nest in large wheat fields, particularly where more suitable habitat (e.g., grasslands, pastures) is lacking (McCracken et al. 2013). As turbine 17 is comprised of two crop types, approximately 50 % corn and 50 % winter wheat (see **Appendix G1**), it is possible that the Bobolink had, or was trying to, establish a territory in the portion agricultural field under winter wheat.

4.1.5 Bat Mortality

The direct impact to bats through collision with wind turbines has been documented in post-construction monitoring reports and peer reviewed literature. Overall bat mortality (of all species) has been reported in the range of 0.3 to 40 bats per MW per year in projects in North America (Arnett et al. 2007, Strickland et al. 2011). Bats, as a group, are generally more commonly observed fatalities than birds at operational wind project facilities (BSC et al. 2016; AWWI 2016). In Canada, 75% of the causalities found were bats (6643 bats of 9 species found at 1889 turbines included in the monitoring results) (BSC et al. 2016). In Ontario, 77% of the casualties found were bats (8 species found at 1489 turbines included in the monitoring results).

Comprehensive studies of bat mortality rates at wind-energy facilities throughout North America indicate that bat mortalities are highest during the fall migration period (July through September, peaking in August; BSC et al. 2014) with more than 50% of the bat mortalities occurring during August (Johnson 2005; Kunz et al. 2007).

Smallwood et al. (2013) compared bat fatality rate estimates among 71 North American wind-energy projects with turbines from 18.5 to 90 m in height. Although results contain large, unadjusted biases and uncertainties in extrapolated data are high, they estimate an annual mortality of 651,000-888,000 bats in the U.S. (Smallwood et al. 2013). In Ontario, recent post-construction monitoring results indicate a total annual mortality of 42,656 bats (BSC et al. 2016). The most recent Ontario data, compiled by Bird Studies Canada et al. (2016), indicate an average of 18.52 bats (+/- 0.79, 95% CI) killed per turbine per year based on data from 46 wind farms in Ontario. Rates ranged from 1-120 bats per year (BSC et al. 2016). Population-level effects are not well understood, however (NAS 2007). During a two-year study at a windfarm within an agriculture landscape in Minnesota, only an estimated small fraction (1.3%) of fall migrating bats present (more than 90,000) collided with wind turbines (Johnson et al. 2004).

4.1.5.1 Adelaide Wind Power Project

The second year of bat monitoring at the Adelaide Wind Power Project identified a corrected mortality rate of 4.08 bats/turbine/year. This is less than the rate that was recorded in 2015 (8.57 bats/turbine/year; **Table 4.1, Appendix E**) and is well below the provincial threshold of 10 bats/year/turbines and the current provincial average of 18.52 bats/turbine/year (BSC et al. 2016).

Bat mortalities were highest at the Adelaide Wind Power Project between the end of July and early-October (**Figure 3, Appendix A**). This is consistent with results in 2015 and corresponds with research elsewhere that documents increased bat fatalities during the fall migration period (July through September; BSC et al. 2016). This occurs as migratory tree bats (e.g., Hoary, Red, and Silver-haired Bats) move through the area.

Bat fatalities were highest at turbine 11 (4 fatalities), followed by turbines 20 and 22, each with 2 mortalities. Turbine 7, 12, and14 experienced individual mortalities at each while the remaining turbines in the survey subset did not experience any mortality events throughout the full 26-week monitoring period (**Table 3.11, Appendix E**; **Figure 4, Appendix A**). In 2015, bat mortalities were highest at turbine 6 (7 fatalities), followed by turbine 17 with 6 fatalities and turbine 20 with 4 fatalities. The remaining turbines in the survey subset experienced 2 or 3 bat mortality events throughout the full 2015 monitoring period. There is no clear pattern of bat fatalities in 2015 or 2016 based on turbine location or proximity to natural features.

4.1.5.1.1 Species at Risk

No bat species at risk were recovered incidentally nor during any of the mortality monitoring programs conducted at the Adelaide Wind Power Project in 2016. This is a decrease from the single Little Brown Myotis (*Myotis lucifugus)* mortality that documented during the 2015 monitoring program.

4.2 CAUSE AND EFFECT MONITORING

4.2.1 Background Review

One Red-tailed Hawk nest from 1968 was documented during the background review as occurring within the Adelaide Project Boundary, located approximately 1 km south of turbine 22. This record, along with recent observations (2014-2016) of both Red-tailed Hawk and Turkey Vultures documented during the breeding season on eBird, were checked in the field during habitat mapping (see Section 4.2.2). No evidence of active nests were found in these locations in 2016.

Turkey Vultures are known to breed within the 10 x 10 km square that overlaps with the Project Boundary (Cadman et al. 2007), although no nests were identified during the background review. This is not surprising as nests may be difficult to locate (e.g., caves, rocky cliffs or hollow trees) and/or on private property in abandoned buildings (e.g., barns, residences; Kirk and Mossman 1998).

No Osprey nest records were identified during the background review, which is consistent with the absence of breeding bird atlas records (Cadman et al. 2007) and pre-construction survey results (Stantec 2012b).

4.2.2 Habitat Assessment

The Raptor Study Area is predominantly agricultural with scattered woodlots, providing nesting habitat for both Red-tailed Hawks (woodlots) and Turkey Vultures (abandoned buildings) but not Osprey (waterways). Foraging habitat was also present for both Turkey Vultures (roadkill, livestock operations) and Red-tailed Hawks (pastures and hayfields) but again not for Osprey (waterways). This is supported by raptor observations during the cause and effect monitoring, which documented 33 Turkey Vultures and 4 Red-tailed Hawks throughout the Project Boundary.

Habitat mapping survey identified one active Red-tailed Hawk nest within the Raptor Study Area (i.e., within 1 km of turbines), located 235 m from the base of turbine 12 (181 m from blade sweep). A second, inactive, Red-tailed Hawk nest was documented during habitat mapping, located approximately 164 m from turbine 9 (a non-subset turbine). It is unknown whether this nest was active in 2015.

No Turkey Vulture nests were confirmed during the habitat assessment, although potential structures, such as barns were scattered throughout the Raptor Study Area. Generally, the habitat assessment found the Raptor Study Area to be relatively uniform in suitability for Turkey Vultures.

The lack of suitable habitat for Osprey, in conjunction with how rarely it is recovered at wind farms in Ontario (comprising 0.22 % of all turbine fatalities in the province; BSC et al. 2016) it is expected that the recorded mortality in 2015 was anomalous. The individual was expected to be in transit, with the closest potential Osprey nesting or foraging habitat approximately 5 km to the south in Strathroy along the Sydenham River and 3 km north of the facility along the Ausable River. The Parkhill Conservation Area, located approximately 15 km north of the closest turbine, includes suitable nesting and foraging habitat, however; no nests or Ospreys were documented during the April 15, 2016 survey.

4.2.3 Behavioural Surveys

Behavioural surveys were conducted at the active Red-tailed Hawk nest in proximity to turbine 12, to identify potential risk factors for mortality. Activity at the nest was recorded between April 15 and June 20, 2016 and again on July 4, 2016.

Red-tailed Hawks typically begin nesting in April with 50% of reported egg dates in Ontario, known to occur between the 5th and 23rd of April (Cadman et al. 2007). The observations of an adult Red-tailed Hawk on the nest near turbine 12 on April 15th, suggest the nest was likely active at that time. The incubation and nestling period for Red-tailed Hawks is 42-46 days (Preston and Beane 2009). As such, observations of Red-tailed Hawks in proximity to the nest through June may have been associated with continued activity at the nest. However, as the nest itself was observed due to leaf cover, this could not be confirmed.

The risk of turbine collision may be affected by many factors, including behaviour, flight path, abundance, landscape, morphology, weather, vision, and whether the individual is a resident or breeding bird (Marques et al. 2014). Raptors, in particular Red-tailed Hawks, may be more susceptible to collisions when compared with other birds, potentially attributable to their foraging and flight behaviour (Hoover and Morrison 2005). However, Garvin et al. (2011) found some signs of turbine avoidance, where resident Red-tailed Hawks and Turkey Vultures changed flight height or direction within 100 m of a turbine. This suggests that resident birds may experience a lower risk of wind turbine collision, as they are familiar with the landscape and avoid the turbines (Drewitt and Landston 2008). As discussed in Section 4.1.4.2.1., interactions between resident Red-tailed Hawks and migrating hawks passing through their territory may result in distracted flight and increase risk of collision. During such interaction, the migratory birds, unfamiliar with the territory, may be at higher risk turbine collision.

At the Adelaide facility, results of the behavioural surveys in 2016 suggest that Red-tailed Hawks appeared to avoid turbines. Flight paths recorded during the behavioural surveys are likely to be of resident birds, associated with the active nest. The surveys recorded soaring behavior over the woodlot, with paths to and from the woodlot clustered on the south side, away from turbine 12 (**Figure 6, Appendix A**). The one exception is the northerly flight path on June 6th, which passes within approximately 130 m of turbine 12. Adult Red-tailed Hawks did not fly within 100 m of turbines 12, 13, or 14, potentially attributable awareness and avoidance, similar to that observed by Garvin et al. 2011, as discussed above.

Overall, the presence of active nests in proximity to wind turbines may increase collision risk for breeding or migrating raptors. To date, three adult Red-tailed Hawk mortalities (turbine 11 on June 11, 2015, turbine 12 on May 2, 2016 and turbine 11 on September 26, 2016) and one Osprey (turbine 9, June 21, 2015) have been recovered within approximately one km of active (or potentially active) Red-tailed Hawk nests. Activity in proximity to the nest suggest it may have been active through 2016. If this was the case, then the observed mortality was likely not of resident birds, but other birds passing through the area, potentially interacting with resident, territorial Red-tailed Hawks. Overall, increased risk of turbine mortality may exist for raptors in proximity to active nests, although it may not be associated with the nesting pair.

5.0 SUMMARY AND RECOMMENDATIONS

This report summarizes the results of the second year of post-construction mortality monitoring the first year of scoped mortality monitoring and cause and effect monitoring at the Adelaide Wind Power Project.

Correcting for searcher efficiency, scavenger removal, and percent area searched, the following mortality rates were recorded in 2016:

- 0.80 raptors/turbine/year
- 0 provincially tracked raptors/turbine/year
- 0.18 small birds/turbine/year across the wind power project
  - range of 0 – 1.93 birds/turbine at individual turbines
- 4.08 bats/turbine/year

The maximum bird mortality during a single mortality monitoring survey was:

- 1 bird at any one turbine
- 1 bird (including raptors) at multiple turbines

Timing of raptor mortalities demonstrated inter-annual variation, with 2015 mortalities occurring during the nesting period (an 11-day period in June) while 2016 mortalities were more consistent with other published studies for birds in general, occurring primarily during the migratory period (September). Results of the 2017 monitoring program will provide a third year of monitoring and additional insights into observed patterns.

Thresholds for bats, small birds, tracked raptors and single mortality events were not exceeded in 2016. However, the recorded rate of 0.80 raptors/turbine/year exceeded the threshold set out by the province (MNR 2011b) and as stipulated in the REA Section I5 of 0.2 raptors/turbine/year.

Results of the behavioural surveys in 2016 suggest that Red-tailed Hawks appeared to avoid turbines (i.e. not travel within 100 m) during flights to and from the monitored nest. Increased risk of turbine mortality may exist for raptors in proximity to active nests, although it may not be associated with the nesting pair.

In accordance with REA Section I10, an appropriate response plan must be prepared and implemented as a result of exceeding the raptor threshold. A response plan has been prepared as an addendum to the Raptor Monitoring Plan (**Appendix D**), which includes additional monitoring and reporting commitments. Specifically, additional measures include:

- Increasing scoped raptor mortality monitoring, extending the weekly monitoring at all non-subset turbine to include both the breeding and fall migration season (weekly, May through October).
- Increased behavioral monitoring, extended with twice weekly monitoring in August, September and October.
- Development of a response protocol to provide MNRF with frequent reports of raptor mortality.

In accordance with REA Section I8, further mitigation measures will be developed following this second year of cause and effect monitoring.

This report meets the annual post-construction reporting requirement of REA Section I11 and I12 for the second year of monitoring at the Adelaide Wind Power Project.

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APPENDIX A
FIGURES

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4770000 4765000 4760000

Lamon Drive
Sylvan Road
River Drive
Roddick Road
Fossil Road
Kenwood Road
Hodgins Road
Haskett Road
Bornish Drive
Elm Tree Drive
Centre Road
Fort Rose Road
Ross Road
Coldstream Road
Petty Street
Poplar Hill Road
Fletcher Road
Cameron Road
Ausable Road
Townsend Line
Glasgow Street
Island Road
Springbank Road
Wyatt Road
Mccubbin Road
Argyle Street
Birnam Line
Langan Drive
Pedden Road
Fernhill Drive
Wardell Drive
Wilson Road
Brick Yard Line
Cuddy Drive
Crathie Drive
Mcewen Drive
Wood Road
Sexton Road
Morse Road
School Road
Robotham Road
Newell Road
Hansford Road
Egremont Road
Egremont Drive
Raptor Nest Location
Highway 402
Zion Line
Sullivan Road
Mullifarry Drive
Seed Road
Brown Road
Pike Road
Wright Street
Adair Boulevard
2Nd Street
Hickory Drive
Highway 402
Strathroy
Riverview Drive
Head Street North
Pannell Lane
Hull Road
Drury Lane
Mercalfe Street East
Glengyle Drive
Mcevoy Road

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Revised: 2017-01-16 By: mkraus

Stantec

Legend

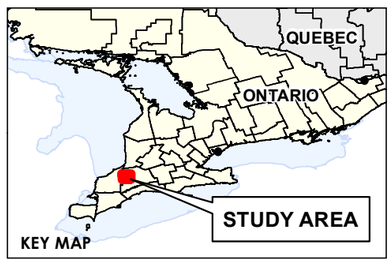
- Project Boundary
- Raptor Nest Location
- Turbine Subset

Project Components

- MET Tower
- Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody



Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
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January 2017
160961067

Client/Project

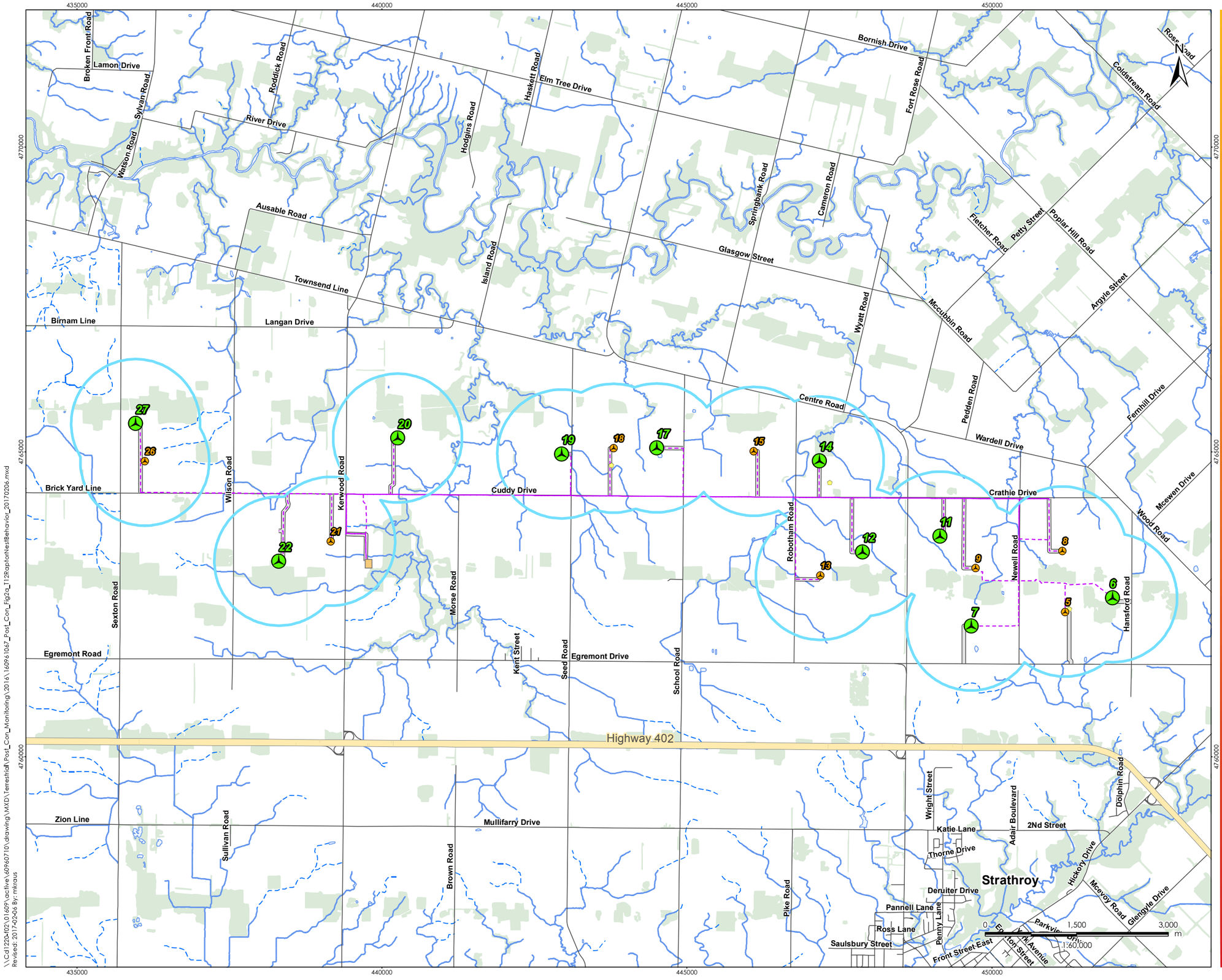
Suncor Energy
Adelaide Wind Project

Figure No.

1

Title

Post-construction Monitoring EEMP Turbine Subset



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Revised: 2017-02-06 By: mkraus

Stantec

Legend

- Raptor Study Area

Project Components

- MET Tower
- Turbine Location
- Turbine Subset
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody

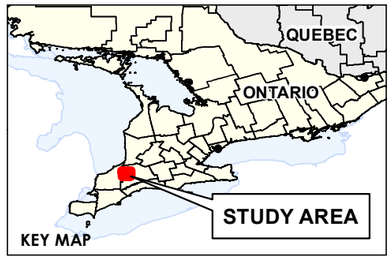

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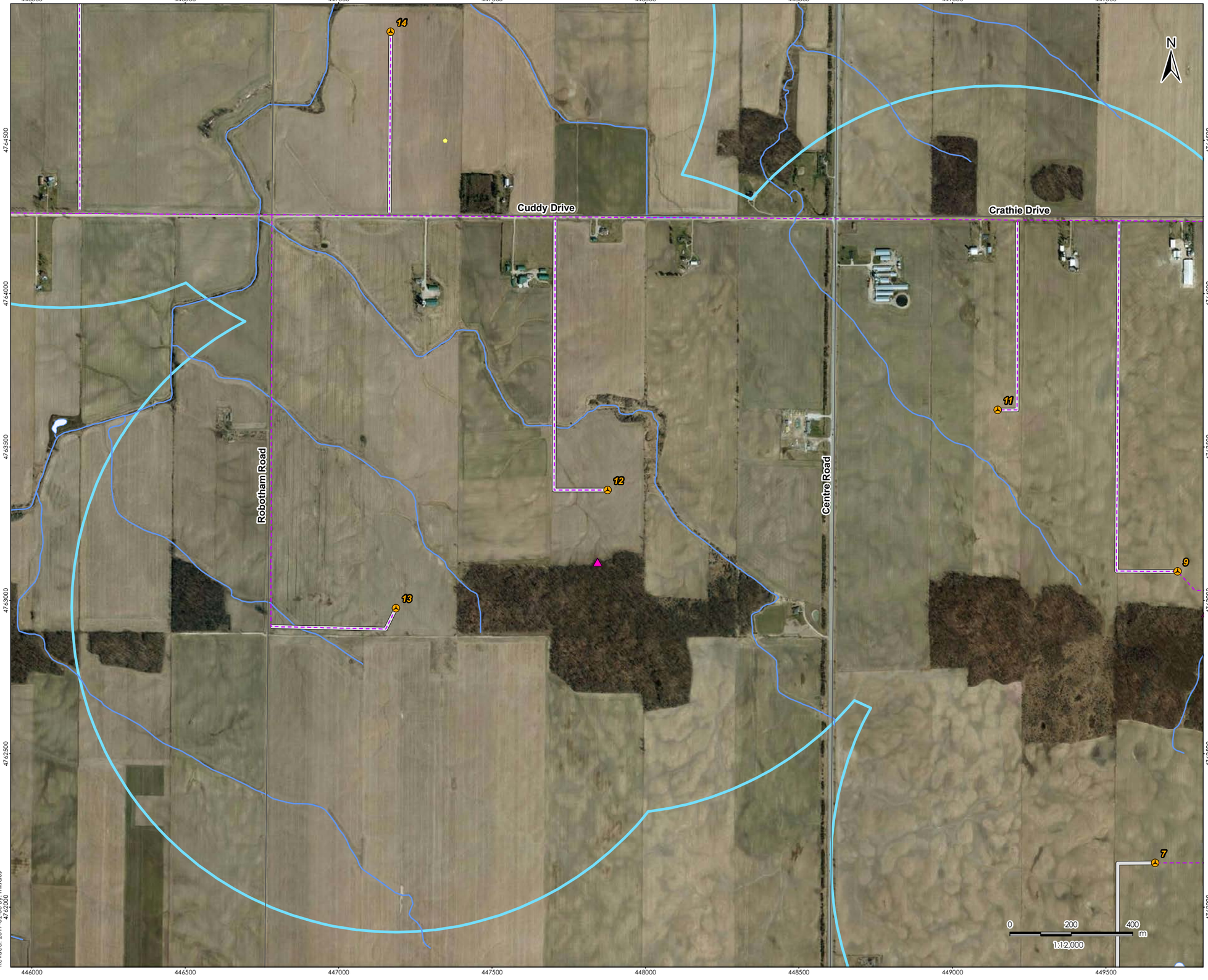
Figure No.

2a

Title

Raptor Study Area



Stantec

Legend

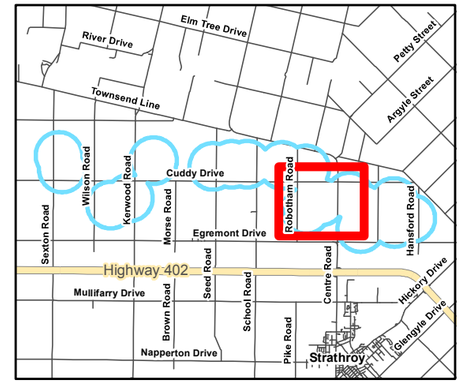
- Raptor Study Area
- Raptor Nest Location

Project Components

- MET Tower
- Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody



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Client/Project

Suncor Energy
Adelaide Wind Project

Figure No.

2b

Title

T12 Raptor Nest Location

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Revised: 2017-02-06 By: mkraus

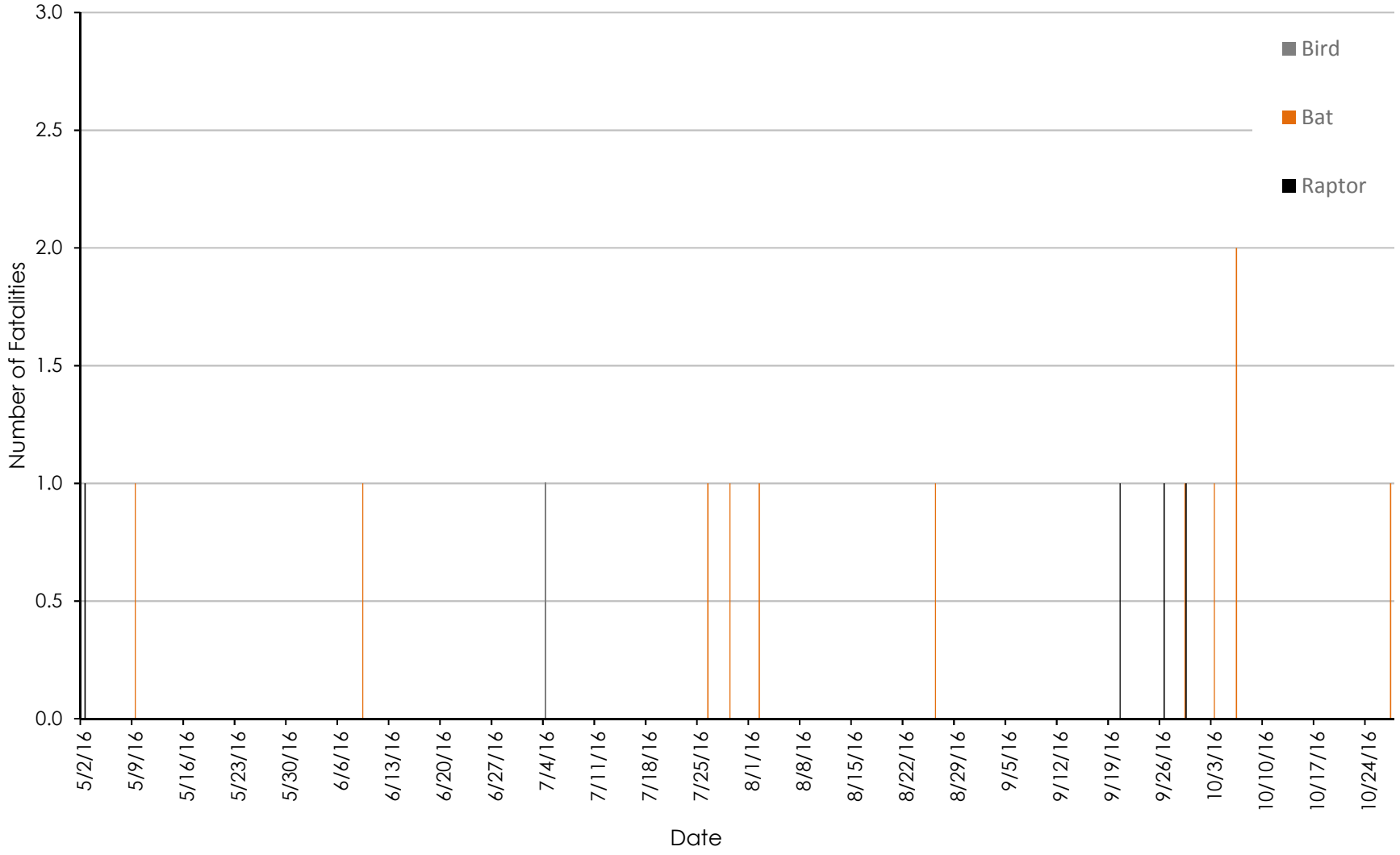


Figure 3: Fatalities at the Adelaide Wind Power Project by Date, 2016

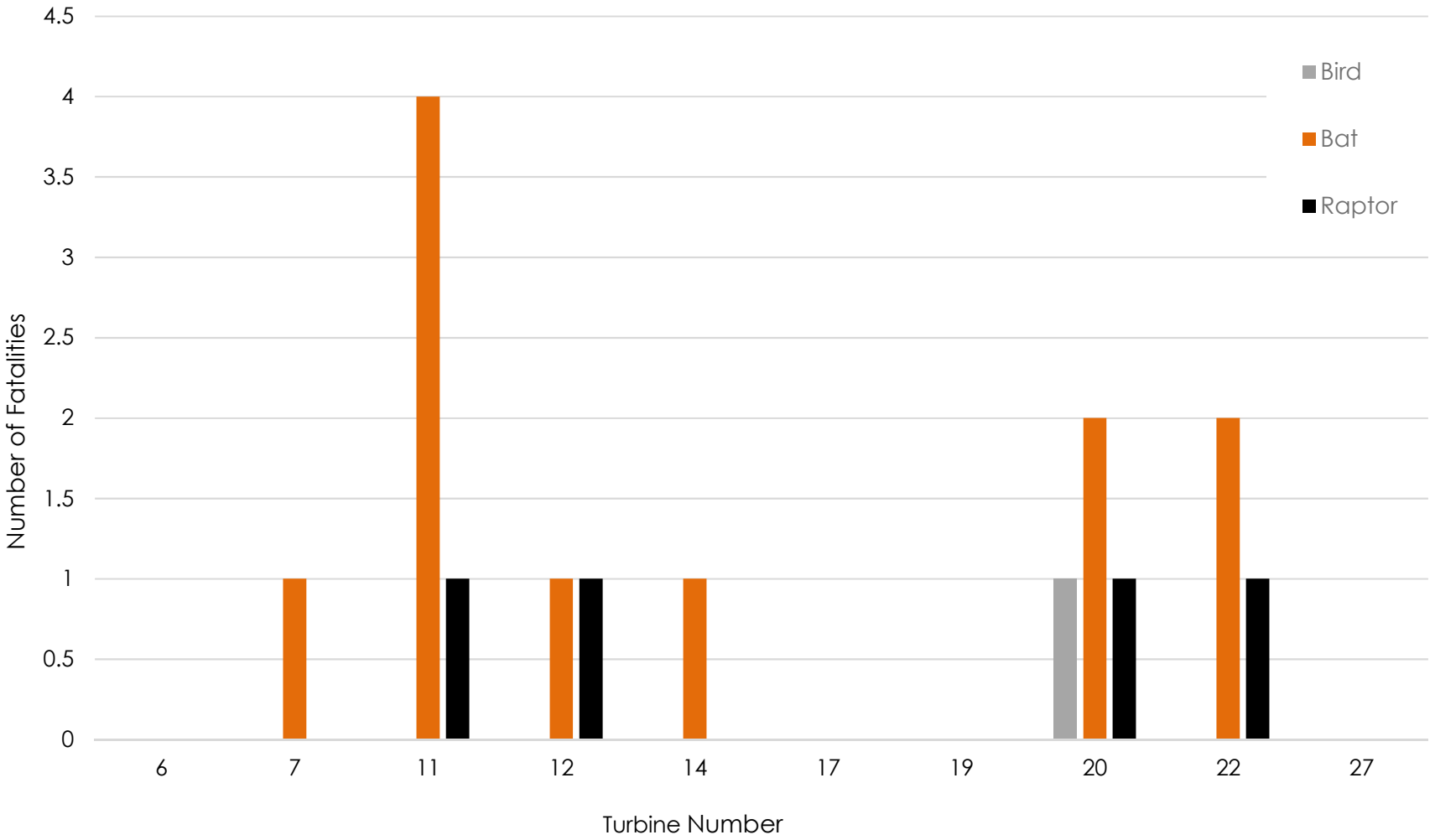
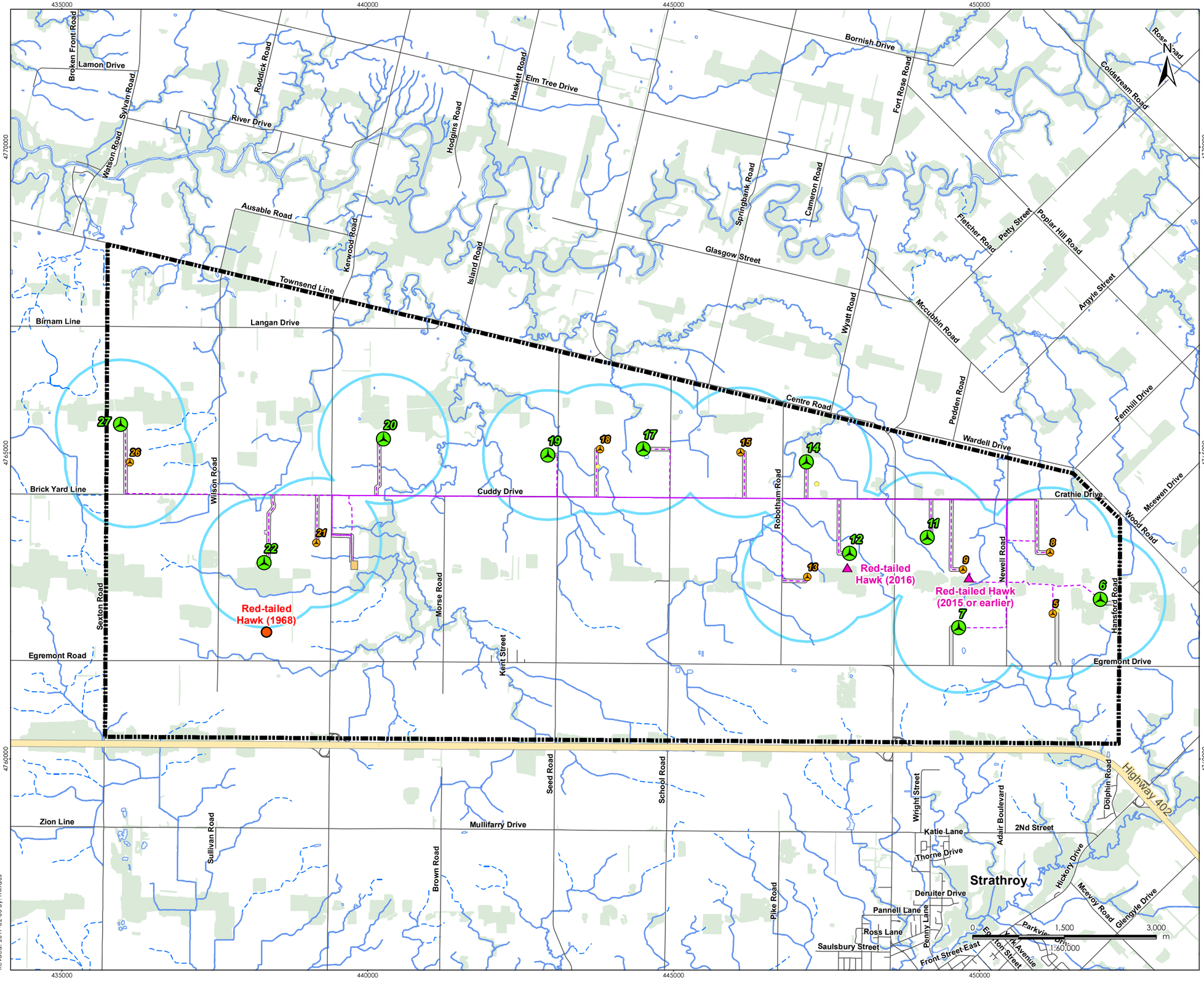


Figure 4: Fatalities at the Adelaide Wind Power Project by Turbine, 2016



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Revised: 2017-02-06 By: mkraus

Stantec

Legend

- Project Boundary
- Raptor Study Area
- Raptor Nest Location
- Historic Raptor Location
- Turbine Subset

Project Components

- MET Tower
- Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody

Notes

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3. Historic Raptor Data provided by Nest Watch © 2016. http://www.birdscanada.org/volunteer/pnw/index.jsp

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160961067

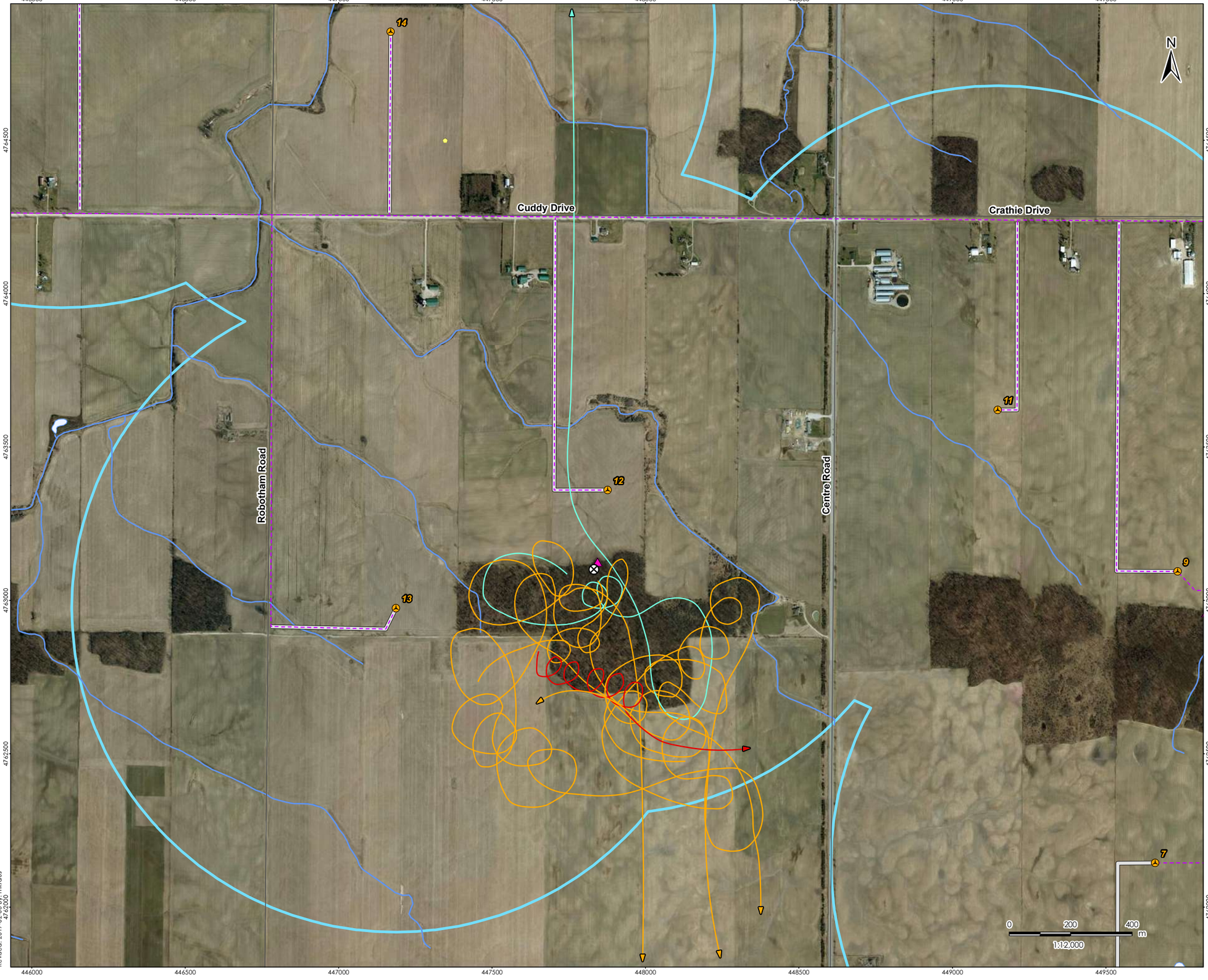
Client/Project

Suncor Energy
Adelaide Wind Project

Figure No.
5

Title

Historic Raptor Data within the Project Boundary



Stantec

Legend

- Raptor Study Area
- Raptor Nest Location
- Adult Perch (May 12, 2016)

Adult Flight Path

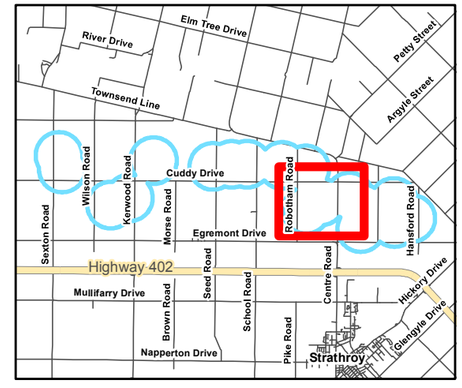
- June 6, 2016
- June 20, 2016
- July 4, 2016

Project Components

- MET Tower
- Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody



Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2013.
3. Orthoimagery © First Base Solutions, 2016. Airphoto Date 2010.

February 2017
160961067

Client/Project

Suncor Energy
Adelaide Wind Project

Figure No.

6

Title

T12 Raptor Behavioral Monitoring Results

\\Cd1220-f02\01609\active\609601\0\drawing\MXD\Terrestrial\Post_Con_Monitoring\2016\160961067_Post_Con_Figs_T12RaptorBehavior_20170110.mxd
Revised: 2017-02-06 By: mkraus

APPENDIX B
ENVIRONMENTAL EFFECTS MONITORING PLAN

Stantec

Ministry of Natural Resources
Confirmation Letter
Dated: July 31, 2012

Ministry of Natural Resources | **Ministère des Richesses naturelles**
Renewable Energy Operations Team
P.O. Box 7000
300 Water Street
4th Floor, South Tower
Peterborough, Ontario K9J 8M5

Ontario

July 31, 2012
Suncor Energy Products Inc.
150 6th Avenue SW
Calgary AB
T2P 3E3

RE: Natural Heritage Section of the EEMP for Suncor Energy Adelaide Wind Power Project

Dear Christopher Scott:

MNR has reviewed the Natural Heritage section of the Environmental Effects Monitoring Plan (EEMP) for the Suncor Energy Adelaide Wind Power Project located within the Municipality of Adelaide Metcalfe, County of Middlesex, Ontario submitted July 27, 2012.

This letter confirms that the EEMP was prepared in respect of birds and bats in accordance with the Ministry of Natural Resources:

- *Birds and Bird Habitats: Guidelines for Wind Power Projects(2011)*
- *Bats and Bat Habitats: Guidelines for Wind Power Projects (2011)*

Post-construction monitoring for the Suncor Energy Adelaide Wind Power Project will also include the following if the results of the pre-construction monitoring surveys deem the natural features significant:

- waterfowl nesting area (Features 6 and 20)
- amphibian breeding habitat woodland (Features 6 and 20)
- amphibian breeding habitat wetland (Feature 16)
- marsh bird breeding habitat (Features 6, 16 and 20)
- shrub/early successional bird breeding habitat (Feature 13)

MNR expects the information contained in the natural heritage section of the EEMP to be considered in MOE'S Renewable Energy Approval decision, and if approved, be implemented by the applicant.

If you have any questions please contact me at amy.cameron@ontario.ca or 705-875-7481.

Sincerely,

Amy Cameron
Coordinator
Renewable Energy Operations Team
Southern Region, MNR

cc. Heather Riddell, Renewable Energy Planning Ecologist

cc. Mitch Wilson, Aylmer District Manager, MNR
cc. Narren Santos, Environmental Assessment and Approvals Branch, MOE
cc. Zeljko Romic, Environmental Assessment and Approvals Branch, MOE
cc. Mark Kozak, Environmental Scientist, Stantec

Environmental Effects for Wildlife Monitoring Plan
July 2012

SUNCOR ENERGY
ADELAIDE WIND ENERGY PROJECT
ENVIRONMENTAL EFFECTS MONITORING PLAN FOR WILDLIFE

File No.: 160960710
July 2012

Prepared for:

Suncor Energy Products Inc.
150 6th Avenue SW
Calgary AB T2P 3E3

Prepared by:

Stantec Consulting Ltd.
Suite 1 - 70 Southgate Drive
Guelph ON N1G 4P5

Table of Contents

1.0 Introduction

1.1 PROJECT OVERVIEW

Suncor Energy Products Inc. ("Suncor") is proposing to develop the Suncor Energy Adelaide Wind Power Project (the Project) within the Municipality of Adelaide Metcalfe, County of Middlesex, Ontario. The proposed Project Location for this report includes all parts of the land in, on or over which the Project is proposed.

It is envisioned that the proposed Project may include up to 28 wind turbines with an estimated total nameplate capacity of up to 40 MW. The number of turbines will be dependent upon final selection of make and model of the wind turbine most appropriate for the proposed Project. The proposed Project would also include access roads, meteorological tower, electrical collector lines, and a substation which would connect the Project with the provincial high voltage transmission system via an existing transmission line that runs through the Project Boundary. Temporary components during construction may include storage and staging areas at the turbine locations, crane pads or mats, staging areas along access roads, delivery truck turnaround areas, and a central laydown area.

1.2 REPORT REQUIREMENTS

This Environmental Effects Monitoring Plan (EEMP), which includes the Post-Construction Monitoring Plan is one component of the REA application for the Project, and has been prepared in accordance with O. Reg. 359/09, the Ontario Ministry of Natural Resources' (MNR's) *Approval and Permitting Requirements Document for Renewable Energy Projects* (September 2009), the *MOE's Technical Guide to Renewable Energy Approvals*, MNR's *Bats and Bat Habitats: Guidelines for Wind Power Projects* (July 2011) and MNR's *Birds and Bird Habitats: Guidelines for Wind Power Projects* (December 2011).

As discussed in the Project's **Natural Heritage Assessment and Environmental Impact Study** (**NHA/EIS**), primary data were collected through bird and wildlife baseline studies in the Project Boundary. These data were augmented with secondary data from published and unpublished sources to generate a dataset from which to assess the potential effects of the Project.

The potential environmental effects to wildlife and wildlife habitat and associated mitigation measures, based upon this dataset, ornithological advice, and professional opinion, among other factors, are provided **in Section 5** of the NHA/EIS and summarized in **Table 1.1, Appendix A** of this EEMP. Additionally, wildlife and wildlife habitat post-construction monitoring commitments are summarized in **Section 5.3** of the NHA/EIS. These commitments provide the first step of confirming the predictions of the EIS and provide the basis from which actions contained in the EEMP may stem.

The purpose of this EEMP is to outline post-construction monitoring survey requirements for a three year period to address potential negative environmental effects for birds and bats, to assess the effectiveness of the proposed mitigation measures and to verify compliance of the Project with applicable provincial and federal legislation and guidelines. This monitoring plan provides details on the post-construction wildlife monitoring program for mortality monitoring of birds and bats and habitat disturbance monitoring for woodland area-sensitive breeding birds. It also identifies potential habitat disturbance monitoring activities for waterfowl nesting areas, marsh bird breeding habitat, shrub/early successional bird breeding habitat and amphibian woodland and wetland breeding habitat should habitat use studies to be conducted by Suncor result in features identified within 120 m of turbines in the **NHA/EIS** being considered significant wildlife habitat. Post-construction mortality monitoring should begin on May 1st of the year that the wind power project is fully operational. If full project commissioning is delayed, post-construction monitoring of a partially completed project should not be delayed for longer than 1 year. If the project is constructed in phases mortality monitoring for each phase should coincide with the commencement of operation of that phase.

2.0 Post-Construction Monitoring Program

2.1 PURPOSE AND TIMING

The purpose of the wildlife post-construction monitoring program is to identify performance objectives, assess the effectiveness of the proposed mitigation measures and to identify contingency measures that will be implemented if performance objectives cannot be met. Furthermore, any unanticipated potentially significant adverse environmental effects discovered during the post-construction monitoring program will be mitigated as described in **Section 3.0**. Post-construction monitoring for wildlife and wildlife habitat recommended in the **NHA/EIS** includes the following:

- *Bird and Bat Mortality monitoring:* twice weekly (3-4 day intervals) mortality monitoring at a minimum of 10 turbines (or 30% of turbines) beginning May 1 to October 31. Weekly monitoring for raptors at the 10 turbines will continue until November 30. Monitoring of all 28 turbines for raptor fatalities will take place once monthly from May through November. Monitoring will be conducted for a period of three years. Searcher efficiency and carcass removal trials will be conducted each year according to current guidance documents.

2.2 PRIMARY DATA COLLECTION

To the extent possible, the same field personnel who carried out the pre-construction baseline studies will carry out the post-construction monitoring work to assist in standardizing the datasets. Wherever possible, a complete 50 m radius from each turbine base will be searched and data collection will be conducted by field personnel skilled at identifying birds and bats by sight. All carcasses found will be photographed and recorded/labelled with the following information; species, sex, date, time, location (UTM coordinates), carcass condition, searcher, injuries, ground cover, and distance and direction to nearest turbine.

Field data collection sheets will also include weather conditions such as wind speed and precipitation, ground cover visibility class, the estimated number of days since death, and condition of each carcass collected.

Although all reasonable effort will be made to conduct surveys as scheduled, surveys will not be conducted if weather (e.g. lightning, severe fog) presents safety concerns. Weather conditions will be noted when surveys were not conducted as scheduled, and every attempt will be made to complete the missed survey(s) as soon as possible.

The detailed monitoring methods, including duration, frequency and survey locations are discussed in the following sections.

The 10 turbines will be selected to provide representative coverage of the habitats and layout of the Project Boundary and will exclude any turbines where vegetation cover precludes searches (i.e. Visibility Classes 3 and 4 [MNR, 2011a]). MNR will be consulted to select the 10 turbines for post-construction monitoring. Where possible, the ground cover around turbines should be maintained at a low level in order to facilitate more accurate bird and bat mortality surveys. The search area of each turbine will be mapped into visibility classes according to the following table:

Table 1: Ground Cover Visibility Classes (Ministry of Natural Resources, 2011)

% Vegetation Cover	Vegetation Height	Visibility Class
≥90% bare ground	≤15%cm tall	Class 1 (Easy)
≥25% bare ground	≤15cm tall	Class 2 (Moderate)
≤25% bare ground	≤25% >30cm tall	Class 3 (Difficult)
Little or no bare ground	≥25% >30cm tall	Class 4 (Very Difficult)

Portion Area Searched

Most birds and bats will fall within 50 m of the turbine base (MNR 2011a) and therefore this distance represents the maximum recommended search area. This value will be used to determine the portion of area searched (P_s). When the entire 50 m radius search area is searched, P_s will equal 100%. If portions of the 50 m radius search area are impossible or futile to search due to site conditions, P_s will be adjusted accordingly based on the searchers' ongoing estimates of the proportion of the search area that was physically searched. If feasible, a GPS will be used to delineate the search area and calculate the P_s.

The area searched will be determined for each turbine by mapping searchable areas on a grid (by visibility class) and counting the number of searched grid cells within 50 m. A map of the actual search area for each turbine searched and a description of areas deemed to be unsearchable due to vegetation height, type, slope, active cultivation, etc., will be provided in the mortality report and maps of the varying search areas will be made available to review agencies. The aggregate area of those cells will be divided by the total area within a 50 m radius circle to determine the percent area searched for that turbine (Ps_x, where x is the turbine number).

$$Ps_x = \frac{\text{actual area searched}}{\pi r^2}$$

The overall Ps for the facility will be calculated as the average of Ps_1 through Ps_{28}.

Observed fatalities will be photographed, and the species, GPS coordinates, substrate, carcass conditions, possible injuries, sex (if possible) and distance and direction to the nearest turbine will be recorded along with the date, time and searcher. This approach to mortality monitoring will facilitate any potential correlation between mortality occurrences, turbine location, habitat/land use features, weather conditions and season.

Carcass Removal Trials

Levels of carcass scavenging must be determined through carcass removal trials. In these trials, carcasses are planted around the wind turbines and monitored until they disappear or have completely decomposed (generally 2 weeks). Carcass removal trials will be conducted once a month (May-Oct) and will involve a minimum of 10 bird and bat carcasses as fresh as possible, with bat carcasses making up at least one third of the carcass removal trials and birds comprising another third, if available, or dark-coloured poultry chicks. If available, at least one raptor carcass will be used for some trials.

Marked test carcasses will be placed out singly at turbines and distributed across the Project Boundary before dusk using gloves and boots to avoid imparting human smell. These trials involve the distribution of carcasses in different substrate/habitat types and visibility classes being searched, at known locations at each wind turbine generator, followed by monitoring every 3-4 days in conjunction with carcass searches, checking to determine the rate of removal. The average carcass removal time is a factor in determining the estimated bird and bat mortality. Carcass removal trials are designed to correct for carcasses that are removed by predators before the search period. Proportions of carcasses remaining after each search interval are pooled to calculate the overall scavenger correction factor:

$$Sc = \frac{n_{visit1} + n_{visit2} + n_{visit3} + n_{visit4}}{n_{visit0} + n_{visit1} + n_{visit2} + n_{visit3}} \quad \text{where}$$

Sc is the proportion of carcasses not removed by scavengers over the search period

$\mathbf{n_{visit0}}$ is the total number of carcasses placed

$\mathbf{n_{visit1} - n_{visit4}}$ are the numbers of carcasses remaining on visits 1 through 4

Corrected Mortality Estimates

In addition to total bird and bat mortalities observed, estimated mortality rates will also consider the results of searcher efficiency, carcass removal trials and portion area searched. There are numerous published and unpublished approaches to incorporating these corrective factors into an overall assessment of total bird and bat mortality. The minimum estimated mortality will be calculated as follows:

$$\mathbf{C = c / (S_{e0} \times S_c \times P_s),} \quad \text{where}$$

C is the corrected number of bird or bat fatalities

c is the number of carcasses found

$\mathbf{S_{e0}}$ is the weighted proportion of carcasses expected to be found by searchers (overall searcher efficiency)

$\mathbf{S_c}$ is the proportion of carcasses not removed by scavengers over the search period

$\mathbf{P_s}$ is the portion of the area searched.

Searcher Efficiency Trials

Searcher efficiency trials require a known number of discreetly marked carcasses to be placed around a wind turbine. Searchers examine the wind turbine area, and the number of carcasses that they find is compared to the number of carcasses placed. Searcher efficiency trials will typically be conducted once in each of spring, summer and fall, but will be repeated if searchers change during the year. Searcher efficiency trials are designed to correct for carcasses that may be overlooked by surveyors during the survey periods. Searcher efficiency trials involve a "tester" that places bird and bat carcasses under turbines prior to the standard carcass searches to test the searcher's detection rate. Each trial will consist of a minimum of 10 carcasses per searcher, per visibility class, per season and will coincide with the regular weekly carcass searches. No more than 3 trial carcasses would be placed at any one time. Trial carcasses will be placed randomly within the search area and the location will be recorded (UTM coordinates) to ensure easy retrieval by the "tester" at the end of the trial day. Trial carcasses will be marked with a unique identifying mark and should be as fresh as possible, with bat carcasses making up at least one third of the carcass removal trials and birds comprising another third, if available, or small brown mammals or dark-coloured poultry chicks.

Searcher efficiency (Se) is calculated for each searcher as follows:

$$Se = \frac{\text{number of test carcasses found}}{\text{number of test carcasses placed} - \text{number of test carcasses scavenged}}$$

A weighted average, or "overall Se", will be calculated to account for varying survey effort between searchers. The overall Se will be calculated as follows:

$$Se_o = Se_1(n_1/T) + Se_2(n_2/T) + Se_3(n_3/T) + Se_4(n_4/T)$$

where:

Se_o	is the overall searcher efficiency;
$Se_1 – Se_4$	are individual searcher efficiency ratings;
$n_1 – n_4$	are number of turbines searched by each searcher
T	is the total number of turbines searched by all searchers.

2.2.1 Bird Mortality Monitoring

Background

Data from wind projects currently operating in Ontario and around the world indicates that very low numbers of bird fatalities occur as result of wind power projects (MNR 2011a). Data from Ontario and the United States indicates that approximately two birds per year are killed by individual turbines, which is very low compared to other existing sources of human caused avian mortality (MNR 2011a). Birds can be killed through collisions with turbine blades and towers, guy wires, meteorological towers and maintenance vehicles. Mortality rates and patterns are affected by density and behavior of birds found in the area, the presence of landscape features such as ridges, valleys, peninsulas and shorelines and weather conditions.

Monitoring

Post-construction bird mortality monitoring surveys may identify specific species, specific periods of high bird mortality or specific turbines/turbine groups linked to bird morality. This information can be used to established protocols for operational mitigation and inform adaptive management. Bird mortality monitoring will be conducted according to MNR's *Birds and Bird Habitats: Guidelines for Wind Power Projects* (MNR, 2011a). **Table 1.2, Appendix A** of this EEMP summarizes the post-construction wildlife monitoring program for mortality monitoring of birds.

Mortality monitoring at 10 turbines (which is in excess of 30% of the total number of turbines contained within the Project) with minimally-vegetated ground cover (i.e., Visibility Classes 1 and 2 [MNR, 2011a]) within a 50 m radius using transects spaced 5.0 -6.0 m apart starting from the base of the wind turbine will be conducted twice-weekly (3-4 day intervals) beginning May 1 to October 31. Monitoring for raptors will continue at the 10 turbines until November 30. Monitoring of all 28 turbines for raptor fatalities will take place once monthly from May 1 through November 30. This will occur for a three year period.

Bird carcasses in good condition may be collected and stored in a freezer for future use in searcher efficiency and/or carcass removal trials. Searchers handling bird carcasses will take reasonable precautions (e.g. gloves, tools etc.) to protect their personal health. Bird carcasses will be placed in heavy-duty plastic bags and transported that day to a freezer, where they will be stored until required for the trials.

Authorization under the *Migratory Bird Convention Act, 1994* ("MBCA") will be required for handling carcasses of migratory birds. Likewise, carcasses of threatened or endangered species are covered under the *Endangered Species Act, 2007* ("ESA") or the federal *Species at Risk Act* ("SARA") and raptor carcasses are covered under the *Fish and Wildlife Conservation Act* ("FWCA"). Suncor and its agents will consult with the Ministry of Natural Resources ("MNR") and the Canadian Wildlife Service ("CWS") prior to commencing the field program to ensure

proper permits and/or procedure are in place to collect, possess and utilize wildlife carcasses for scientific purposes.

Other permits, approvals, authorizations, etc., are not likely to be required from the MNR or Environment Canada ("EC") to permit the monitoring activities contemplated in this Plan.

2.2.2 Bat Mortality Monitoring

Background

Bat mortality has been documented at wind power facilities in a variety of habitats across North America. Nearly every monitored wind power facility in the United States and Canada has reported bat mortality with minimum annual mortality varying from < 1 to 50 bat fatalities/turbine/year (MNR 2006). The majority of bat fatalities at wind power facilities occur in the late summer and fall, and the long-distance migratory bats (i.e., Hoary Bat, Eastern Red Bat, Silver-haired Bat) appear to be most vulnerable to collisions with moving turbine blades. Specific factors causing bat mortality and affecting species vulnerability to wind turbine mortality remain unclear, although recent evidence from Alberta suggests that air pressure differences in the blade vortices may contribute to bat mortality. Ontario specific data are relatively sparse at this time.

Monitoring

In Ontario, the post-construction monitoring season for bats is based on bat activity patterns, covering spring activity through fall swarming and migration and is consistent with the post-construction monitoring season for birds; thus occurring from May 1- October 31. Bat mortality monitoring will be conducted according to MNR's *Bats and Bat Habitats: Guidelines for Wind Power Projects* (2011b). In general, the mortality monitoring requirements for bats will be captured in conjunction with bird mortality monitoring, as described in **Section 2.2.1**. **Table 1.2, Appendix A** of this EEMP summarizes the post-construction wildlife monitoring program for mortality monitoring of bats.

- Bat mortality monitoring will be conducted twice-weekly (3-4 day intervals) within minimally-vegetated portions (i.e., Visibility Classes 1 and 2 [MNR, 2011b]) of a 50 m search area radius from the base of 10 turbines beginning May 1 to October 31st for a three-year period in accordance with MNR guidelines. This time period includes the core season when resident and migratory bats are active. Bat mortality monitoring will be conducted in conjunction with other monitoring activities (birds) for efficiency.
- Searcher efficiency trials will be conducted seasonally and carcass removal trials will be conducted monthly between May 1 and October 31st. Searcher efficiency and carcass removal rates are known to be more variable for bats than for birds throughout the year and depending on habitat (in part due to the relative size of the species).

As with birds, trial carcasses will be discreetly marked so they can be identified as study carcasses. Each trial will consist of a minimum of 10 carcasses per searcher per visibility class (for searcher efficiency trials) or per trial (for scavenger removal trials). At least one-third of the trial carcasses should be bats.

Bat carcasses in good condition may be collected and stored in a freezer for future use in searcher efficiency and/or scavenger removal trials. Searchers handling bat carcasses will take reasonable precautions (e.g., gloves, tools etc.) to protect their personal health. All searchers will ensure they have updated rabies pre-exposure vaccinations. Biological material will be disposed of in a way to ensure that it does not pose a public or environmental health risk and in accordance with any applicable federal, provincial, and municipal laws.

2.2.3 Woodland Area-Sensitive Breeding Bird Surveys

Woodland habitat in Features 1, 8, 11 and 20, located within 120 m of the Project Location, were considered significant wildlife habitat for woodland area-sensitive breeding birds, as described in **Sections 4.2.3.3 and 5.2.3.5** of the **NHA/EIS**. As Features 8 and 20 are located within 120 m of Turbines 22 and 9, respectively, a post-construction point count-based study will be implemented to assess any actual disturbance effects to woodland area-sensitive breeding bird species in these features. **Table 1.2, Appendix A** of this EEMP summarizes the post-construction wildlife monitoring program for habitat disturbance monitoring of woodland area-sensitive breeding birds.

Four pre-construction point count stations in woodland habitat will be established and surveyed during the pre-construction surveys. Two stations will be located in each of Features 8 and 20, with one station located within 120 m of the turbine, and the other station located approximately 200 m from the turbine and used as 'control' sites. Each of the surveys will include a ten-minute point count at each location, conducted during the breeding season (May 1 to July 31), for a minimum of three years. Each station should be surveyed a minimum of 3 times: once early in the season; once in mid-season; and, once later in the season with at least 10 days between surveys at a particular station. Point counts must be performed in the early morning, between dawn (one half hour before sunrise) and about 4 hours after sunrise. Surveys in late June and early July should usually be completed within 3 hours of sunrise. Surveys should be performed when the wind speed is 3 or less on the Beaufort scale and when there is no precipitation unless it is a light drizzle. Breeding pair density is a standard measure that will be used to compare among years or between control (> 120 m) and impact sites (< 120 m).

The woodland species observed will be compared to pre-construction conditions. Particular attention should be paid to those species identified as woodland area-sensitive indicator species as per the draft SWH Ecoregion 7E Criterion Schedule (MNR, 2012), including: Yellow-bellied Sapsucker, Red-breasted Nuthatch, Veery, Blue-headed Vireo, Northern Parula, Black-throated Green Warbler, Blackburnian Warbler, Black-throated Blue Warbler, Ovenbird, Scarlet Tanager, Winter Wren and Pileated Woodpecker; and, Special Concern species Cerulean Warbler and Canada Warbler.

MNR, along with the proponent and other relevant agencies, will collectively review the results of the post-construction monitoring to determine if an ecologically significant disturbance/avoidance effect is occurring, and whether such an effect is attributable to the wind turbines and not external factors. These discussions will determine if and when contingency

measures will be undertaken. The best available science and information should be considered when determining appropriate mitigation.

2.2.4 Habitat Use Studies and Additional Habitat Disturbance Monitoring

2.2.4.1 Habitat Use Studies

As per the requirements of Appendix D of the *Natural Heritage Assessment Guide for Renewable Energy Projects* (MNR, 2011a), habitat use studies must be undertaken to determine the actual use of the habitat prior to any construction activities occurring within 120 m of the habitat. In **Section 5.2** of the **NHA/EIS**, Suncor committed to undertake habitat use studies due to the location of proposed turbines within 120 m of candidate significant wildlife habitat for waterfowl nesting areas, marsh bird breeding habitat, shrub/early successional breeding bird habitat, amphibian woodland breeding habitat and amphibian wetland breeding habitat. Methodologies for undertaking the habitat use studies for candidate Significant Wildlife Habitat are described in the following sections.

Waterfowl nesting areas

As per the requirements of Appendix D of the *Natural Heritage Assessment Guide for Renewable Energy Projects* (MNR, 2011a), due to the location of proposed turbines within 120 m of Features 6 and 20, the proponent must commit to undertaking studies to determine the actual use of the habitat prior to any construction activities occurring within 120 m of the habitat.

Habitat use studies will be conducted according to *"Bird and Bird Habitats: Guidelines for Wind Power Projects"* (MNR, 2011c) and will include nesting studies to be completed during the breeding season (April-June). Specifically, nesting studies will consist of point counts at stations established in Features 6 and 20. Point counts will be performed in the early morning, between dawn (one half hour before sunrise) and about 4 hours after sunrise. Each station will be surveyed a minimum of 3 times, conducted early in the season, mid-season and later in the season, with at least 10 days between surveys at a particular station. Point counts should be performed when there is as little wind as possible (i.e., wind speeds should be 3 or less on the Beaufort scale) and should begin as early as possible in the morning (but not earlier than one half-hour before local sunrise), when the wind is generally calm so that windy conditions that may arise later in the morning can be avoided. Point counts should not be conducted if it is raining unless precipitation is not more than a light drizzle.

At each station, the surveyor will observe for ten minutes, recording all species seen or heard (including waterfowl), along with an estimate of the number of individuals of each species and the highest level of breeding evidence observed for each observation. Surveyors will estimate the distance to each bird using a scale of 0–50 m, 50–100 m and further than 100 m. Birds that move during the survey will be recorded in the closest distance category that they entered during the survey. Data that will be reported are the number of birds of each species detected in each distance band. Birds that fly over without stopping should be recorded separately as "fly-overs". Additional information that will be recorded on the appropriate data forms include:

- Weather conditions (temperature, wind speed (on a Beaufort scale), % cloud cover, and presence of any precipitation should be recorded).
- Date and time of day.
- GPS coordinates of the point location.
- Name of the observer doing field work.

Given the size and characteristics of the waterfowl nesting areas in Features 6 and 20, it is anticipated that the habitats could potentially support some of the indicator waterfowl species identified in the Draft Significant Wildlife Habitat Ecoregion 7E Criterion Schedule, including: Black Duck, Wood Duck and Mallard.

Marsh bird breeding habitat

As per the requirements of Appendix D of the *Natural Heritage Assessment Guide for Renewable Energy Projects* (MNR, 2011a), due to the location of a proposed turbines within 120 m of Features 6, 16 and 20, the proponent must commit to undertaking studies to determine the actual use of the habitat prior to any construction activities occurring within 120 m of the habitat. Habitat use studies will be conducted according to *"Bird and Bird Habitats: Guidelines for Wind Power Projects"* (MNR, 2011c) and will include breeding surveys in May/June when marsh bird species are actively nesting in wetland habitats. Specifically, nesting studies will consist of point counts at stations established in Features 6, 16 and 20. Point counts will be performed in the early morning, between dawn (one half hour before sunrise) and about 4 hours after sunrise. Each station will be surveyed a minimum of 3 times, conducted early in the season, mid-season and later in the season, with at least 10 days between surveys at a particular station. Point counts should be performed when there is as little wind as possible (i.e., wind speeds should be 3 or less on the Beaufort scale) and should begin as early as possible in the morning (but not earlier than one half-hour before local sunrise), when the wind is generally calm so that windy conditions that may arise later in the morning can be avoided. Point counts should not be conducted if it is raining unless precipitation is not more than a light drizzle.

At each station, the surveyor will observe for ten minutes, recording all species seen or heard (including waterfowl), along with an estimate of the number of individuals of each species and the highest level of breeding evidence observed for each observation. Surveyors will estimate the distance to each bird using a scale of 0–50 m, 50–100 m and further than 100 m. Birds that move during the survey will be recorded in the closest distance category that they entered during the survey. Data that will be reported are the number of birds of each species detected in each distance band. Birds that fly over without stopping should be recorded separately as "fly-overs". Additional information that will be recorded on the appropriate data forms include:

- Weather conditions (temperature, wind speed (on a Beaufort scale), % cloud cover, and presence of any precipitation should be recorded).

- Date and time of day.
- GPS coordinates of the point location.
- Name of the observer doing field work.

Given the size and characteristics of Features 6, 16 and 20, it is anticipated that the habitats could potentially support some of the indicator marsh bird species identified in the Draft Significant Wildlife Habitat Ecoregion 7E Criterion Schedule, including: Virginia Rail, Sora and Sedge Wren in Feature 16; and, Green Heron in Features 6 and 20.

Shrub/early successional bird breeding habitat

As per the requirements of Appendix D of the *Natural Heritage Assessment Guide for Renewable Energy Projects* (MNR, 2011a), due to the location of a proposed turbine within 120 m of Feature 13, the proponent must commit to undertaking studies to determine the actual use of the habitat prior to any construction activities occurring within 120 m of the habitat. Habitat use studies will be conducted according to *"Bird and Bird Habitats: Guidelines for Wind Power Projects"* (MNR, 2011c) and will include breeding surveys in spring and early summer (May-June) when birds are singing and defending their territories. Specifically, nesting studies will consist of point counts at stations established in Feature 13. Point counts will be performed in the early morning, between dawn (one half hour before sunrise) and about 4 hours after sunrise. Each station will be surveyed a minimum of 3 times, conducted early in the season, mid-season and later in the season, with at least 10 days between surveys at a particular station. Point counts should be performed when there is as little wind as possible (i.e., wind speeds should be 3 or less on the Beaufort scale) and should begin as early as possible in the morning (but not earlier than one half-hour before local sunrise), when the wind is generally calm so that windy conditions that may arise later in the morning can be avoided. Point counts should not be conducted if it is raining unless precipitation is not more than a light drizzle.

At each station, the surveyor will observe for ten minutes, recording all species seen or heard (including waterfowl), along with an estimate of the number of individuals of each species and the highest level of breeding evidence observed for each observation. Surveyors will estimate the distance to each bird using a scale of 0–50 m, 50–100 m and further than 100 m. Birds that move during the survey will be recorded in the closest distance category that they entered during the survey. Data that will be reported are the number of birds of each species detected in each distance band. Birds that fly over without stopping should be recorded separately as "fly-overs". Additional information that will be recorded on the appropriate data forms include:

- Weather conditions (temperature, wind speed (on a Beaufort scale), % cloud cover, and presence of any precipitation should be recorded).
- Date and time of day.
- GPS coordinates of the point location.

- Name of the observer doing field work.

Given the size and characteristics of the habitat in Feature 13, it is anticipated that the habitats could potentially support some of the indicator shrub/early successional breeding bird species identified in the Draft Significant Wildlife Habitat Ecoregion 7E Criterion Schedule, including: Brown Thrasher, Black-billed Cuckoo, Eastern Towhee, Willow Flycatcher or Yellow-breasted Chat.

Amphibian woodland breeding habitat

As per the requirements of Appendix D of the *Natural Heritage Assessment Guide for Renewable Energy Projects* (MNR, 2011a), due to the location of proposed access roads within 120 m of Features 6 and 20, the proponent must commit to undertaking studies to determine the actual use of the habitat prior to any construction activities occurring within 120 m of the habitats.

Habitat use surveys will be conducted according to the Marsh Monitoring Program, or "MMP" (BSC, 2003) protocol for breeding amphibians. According to the protocols set out in the MMP, three separate surveys will be completed for breeding amphibians. Based on the location of the Project Boundary (i.e., between the 43rd and 47th parallels), the first survey window is generally recognized as April 15 – 30, or when night-time air temperatures are consistently above 5ºC. The second survey window is generally recognized as May 15 – 30, or when night-time air temperatures are consistently above 10ºC. The third survey window is generally recognized as June 15 – 30, or when night-time air temperatures are consistently above 17ºC. Surveys are time sensitive (conducted half an hour after sunset) as well as weather dependent. Surveys during the second and third windows will be repeated at the stations established during the first survey. Data will be recorded on Amphibian Call Survey Observation Forms.

Given the size and characteristics of the ponds in Features 6 and 20 and the historic ranges of frog species in the Project Boundary, it is anticipated that the habitats could potentially support some of the indicator amphibian species identified in the Draft Significant Wildlife Habitat Ecoregion 7E Criterion Schedule, including: Gray Treefrog; Spring Peeper; Western Chorus Frog; and, Wood Frog.

Amphibian wetland breeding habitat

As per the requirements of Appendix D of the *Natural Heritage Assessment Guide for Renewable Energy Projects* (MNR, 2011a), due to the location of a proposed access road within 120 m of Feature 16, the proponent must commit to undertaking studies to determine the actual use of the habitat prior to any construction activities occurring within 120 m of the habitat.

Habitat use surveys will be conducted according to the Marsh Monitoring Program, or "MMP" (BSC, 2003) protocol for breeding amphibians. According to the protocols set out in the MMP, three separate surveys to be completed for breeding amphibians. Based on the location of the Project Boundary (i.e., between the 43rd and 47th parallels), the first survey window is generally

recognized as April 15 – 30, or when night-time air temperatures are consistently above 5ºC. The second survey window is generally recognized as May 15 – 30, or when night-time air temperatures are consistently above 10ºC. The third survey window is generally recognized as June 15 – 30, or when night-time air temperatures are consistently above 17ºC. Surveys are time sensitive (conducted half an hour after sunset) as well as weather dependent. Surveys during the second and third windows will be repeated at the stations established during the first survey. Data will be recorded on Amphibian Call Survey Observation Forms.

Given the size and characteristics of the ponds in Feature 16 and the historic ranges of frog species in the Project Boundary, it is anticipated that the habitats could potentially support some of the indicator amphibian species identified in the Draft Significant Wildlife Habitat Ecoregion 7E Criterion Schedule, including: American Toad, Western Chorus Frog and Northern Leopard Frog.

2.2.4.2 Additional Habitat Disturbance Monitoring

Should the results of the habitat use studies result in the determination that these habitats are considered significant (as determined by Suncor or their agents and confirmed by MNR), the monitoring plan will be expanded to include additional post-construction habitat disturbance monitoring. If a determination of significance is made, the results of the habitat use studies will constitute the baseline for habitat disturbance monitoring. Methodologies implemented in undertaking the habitat use studies will be replicated during habitat disturbance monitoring, and undertaken as per the schedule presented in **Table 1.2, Appendix A**. If required, post-construction habitat disturbance monitoring will take place for a minimum of three (3) years for: waterfowl nesting areas; marsh bird breeding habitat; and, shrub/early successional breeding bird habitat, and one (1) year for: amphibian woodland breeding habitat; and, amphibian wetland breeding habitat.

2.3 Reporting and Review of Results

Annual post-construction monitoring reports will summarize and analyze the results of all wildlife surveys. Reports will be submitted to the MOE and MNR within three months of the conclusion of the November mortality monitoring.

The monitoring program will be reassessed by MNR and Suncor at the end of each monitoring year. Pending the reassessment results, the program methods, frequencies, and duration may be reasonably modified to better reflect the findings.

3.0 Adaptive Management Program

The adaptive management program described in this section outlines performance objectives, and contingency measures that will be implemented should the performance objectives not be met.

Contingency plans address immediate mitigation actions necessary in case of a significant bird or bat mortality event, or if mitigation actions fail. Contingency measures may include an adaptive management approach. An adaptive management program allows mitigation measures to be implemented in the event that unanticipated potentially significant adverse environmental effects are observed. Potentially significant adverse effects will be assessed through review of the annual report.

The following sections describe the procedures for notifications, reporting, and adaptive management for mortality and disturbance effects monitoring.

3.1 MORTALITY MONITORING

All bird and bat mortality will be reported in the annual report submission. Mortality rate is expressed as the number of fatalities per turbine per year (e.g., from May 1 to November 30). Mortality of priority species in Bird Conservation Region ("BCR") 13 and mortality of all species of conservation concern, such as raptors, marsh breeding birds, woodland area-sensitive breeding birds and shrub/early successional breeding bird species will be highlighted in the annual post-construction monitoring reports. A threshold approach will be used to identify and mitigate significant bird and bat mortality (potential negative environmental effects) resulting from the operation of wind turbines.

3.1.1 Birds

Post-construction mitigation, including operational controls, will be considered if annual mortality of birds exceeds any of the following thresholds defined by the MNR (2011a):

- 14 birds/turbine/year at individual turbines or turbine groups;
- 0.2 raptors/turbine/year (all raptors) across a wind power project; or
- 0.1 raptors of provincial conservation concern/turbine/year across a wind power project.

Or if bird mortality during a single mortality monitoring survey exceeds:

- 10 or more birds at any one turbine; or
- 33 or more birds (including raptors) at multiple turbines.

Mortality levels maintained below these thresholds are considered unlikely to affect bird populations (MNR 2011a).

Any and all observed mortality of species at risk (i.e., a species listed as Endangered, Threatened or Special Concern under Schedule 1 of the federal SARA or a species listed on the Species at Risk in Ontario list as Extirpated, Endangered, Threatened, or Special Concern under the provincial ESA) that occurs will be reported within 48 hours to MNR.

If with due consideration of seasonal abundance and species composition, annual mortality levels at turbines located outside 120 m of bird significant wildlife habitat (SWH) exceed the thresholds noted above, two years of subsequent scoped mortality and cause and effects monitoring will be conducted. Following scoped monitoring, post-construction mitigation (e.g., operational mitigation) and effectiveness monitoring may be required at individual turbines where a mortality effect has been identified or significant annual mortality persists (MNR 2011a).

If significant annual mortality persists, or occurs at turbines located within 120 m of bird SWH, immediate post-construction mitigation (including operational mitigation), as identified in the Environmental Impact Study, and 3 years of effectiveness monitoring may be required. Avoidance-disturbance effects monitoring will also be required. MNR will be engaged to initiate an appropriate response plan as set out in the MNR's Bird Guidelines (2011a). The response plan would include an analysis of the species, timing and distribution of fatalities to determine potential risk factors leading to mortality. The analysis may include an evaluation of the mortality data and/or behavioral studies to better refine when and where species are most at risk of collision. The results of this analysis will be used to develop operational mitigation measures, which will include the following

- Periodic shut-down of select turbines at specific times of year, when mortality risks to the affected bird species is particularly high (i.e., migration)[1]
- Blade feathering at specific times of year, when mortality risks to the affected bird species is particularly high (i.e., migration)
- Or alternate plan agreed to between Suncor and MNR

3.1.2 Bats

Operational mitigation is required where annual post-construction mortality monitoring exceeds 10 bats/turbine/year (MNR, 2011).

This threshold of 10 bats/turbine/year has been determined based on bat mortality reported at wind power projects in Ontario and comparison with jurisdictions across North America.

[1] MNR 2011a

Operational mitigation to be implemented includes changing the wind turbine cut-in speed to 5.5 m/s (measured at hub height) or feathering of wind turbine blades when wind speeds are below 5.5 m/s.

The majority of bat mortalities from wind turbine operations occur during fall migration. Where post-construction monitoring indicates that annual bat mortality threshold of 10/bats/turbine/year has been exceeded, operational monitoring will be implemented across the wind power project from sunset to sunrise, from July 15-September 30 and will continue for the duration of the project. If site specific monitoring indicates a shifted peak mortality period (due to higher latitude projects), operational mitigation may be shifted to match the peak mortality, with mitigation maintained for a minimum of 10 weeks. Any shift in the operational mitigation period to match peak mortality will be determined in consultation with the MNR. Where post-construction mitigation is applied, an additional 3 years of effectiveness monitoring is required, as set out in the MNR's Bat Guidelines (2011).

3.1.3 Contingency Plan

3.1.3.1 Contingency Plan for Mass Mortality of Birds

To date, there have been no recorded events of mass mortality of birds at wind farms in Ontario. The various post-construction monitoring projects in Ontario typically record between 0 to 2 bird fatalities at individual turbines during any one survey, with only a single record of 3 birds fatalities observed at one turbine during a single visit (Friesen, 2011). As such, the risk of a mass mortality event for birds is anticipated to be very low.

In the event of a mass mortality event, defined as 10 or more bird fatalities at any one turbine, or 33 or more bird fatalities (including raptors) at multiple turbines on a single survey, the following steps will be implemented:

1. MNR will be notified of the event within 48 hours and will be provided with any available details (e.g. species, number and distribution of turbines involved).

2. An emergency search of all turbines in the Project will be conducted as soon as feasibly possible to determine the extent and the distribution of the mortality event.

3. An analysis of the results of the emergency search will be completed to identify potential risk factors (e.g., weather conditions, proximity to natural heritage features) leading to the mortality event.

4. Based on the risk factors identified, additional mitigation and scoped monitoring recommendations will be developed in conjunction with MNR with the goal of avoiding future mortality events.

3.1.3.2 Contingency Plan for Continued Significant Bat Mortality

Additional mitigation measures may be implemented in the event of continued significant bat mortality (i.e., more than 10 bats/turbine/year) after the mitigation measures outlined in Section 3.1.2 have been implemented. Should the cut-in speed mitigation be implemented and the bat mortality thresholds continue to be exceeded, Suncor will work with the MNR to determine additional mitigation and scoped monitoring requirements.

4.0 Best Management Practices

Suncor will include the following best management practices as part of the post-construction monitoring program (as outlined in MNR, 2011a and 2011b).

4.1 DATA MANAGEMENT

All pre- and post-construction data, collected in accordance with MNR guidance and reported to the MOE, will be submitted to the joint Canadian Wildlife Service – Canadian Wind Energy Association – Bird Studies Canada – Ontario Ministry of Natural Resources Wind Power and Birds Monitoring Database.

4.2 WHITE-NOSE SYNDROME

Carcasses of the following species found during bat mortality searches may be sent to the Canadian Cooperative Wildlife Health Centre for analysis of White-nose Syndrome and should not be used in carcass removal or searcher efficiency trials:

- Northern Long-eared Bat *(Myotis septentrionalis)*
- Little Brown Bat *(Myotis lucifugus)*
- Small-footed Bat *(Myotis leibii)*
- Tri-coloured Bat/Eastern Pipistrelle *(Perimyotis subflavus)*
- Big Brown Bat *(Eptesicus fuscus)*

4.3 BAT TISSUE SAMPLES

Tissue samples from bat carcasses may be used in a number of DNA analyses to provide insight into population size and structure, as well as the geographic origin migrants. Suncor will contact the local MNR office prior to disposing bat carcasses, to determine if this type of research is occurring in the area.

5.0 Closure

This Environmental Effects Monitoring Plan for the Suncor Energy Adelaide Wind Power Project has been prepared in accordance with O. Reg. 359/09, s. 23.1, the MNR's *Approval and Permitting Requirements Document for Renewable Energy Projects* (September 2009), the *MOE's Technical Guide to Renewable Energy Approvals*, MNR's *Bats and Bat Habitats: Guidelines for Wind Power Projects* (July 2011) and MNR's *Birds and Bird Habitats: Guidelines for Wind Power Projects* (December 2011).

Stantec Consulting Ltd. prepared this Environmental Effects Monitoring Plan for Suncor Energy Products Inc. for the Suncor Energy Adelaide Wind Power Project. Suncor is committed to implementing the appropriate protection and mitigation measures as they apply to the construction and operation of the proposed Project.

Respectfully submitted,
STANTEC CONSULTING LTD

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Table 1.2: Summary of Environmental Effects Monitoring Plan for Operation of the Suncor Adelaide Wind Energy Project

Potential Negative Effect	Mitigation Strategy	Performance Objective	Monitoring Plan					Contingency Measures
			Methods	Location	Frequency	Rationale	Reporting	
Mortality Monitoring for Birds and Bats								
Direct mortality to birds through turbine collisions	Post-construction mortality monitoring program	Maintain mortality below thresholds	Post-construction monitoring of mortality rates; carcass searches Methods are outlined in detail in this Environmental Effects Monitoring Plan	At 10 turbines (all birds) and 28 turbines (raptors) MNR will be consulted to determine location of turbines to be monitored.	Conducted twice-weekly (3-4 day intervals) at 10 turbines from May 1-October 31. Weekly monitoring for raptors will continue until November 30. Monitoring of all 28 turbines for raptor fatalities once a month from May 1-November 30. Monitoring to be conducted for three years.	Bird and Bird Habitats: Guidelines for Wind Power Projects, 2011	Annual Report will be submitted to MNR with the following anticipated dates: February 2015 February 2016 February 2017	Post-construction mitigation, including operational controls, will be considered if annual mortality of birds exceeds any of the following thresholds defined by the MNR (2011a): • 14 birds/turbine/year at individual turbines or turbine groups; • 0.2 raptors/turbine/year (all raptors) across a wind power project; or • 0.1 raptors of provincial conservation concern/turbine/year across a wind power project. Or if bird mortality during a single mortality monitoring survey exceeds: • 10 or more birds at any one turbine; or • 33 or more birds (including raptors) at multiple turbines. Mitigation may include operational controls, such as periodic shut-down on select turbines or blade feathering at specific times of the year, or alternate plan agreed to by Suncor/MNR. MNR will be consulted on contingency measures to be implemented.
Direct mortality to bats through turbine collisions	Post-construction mortality monitoring program	Maintain mortality below thresholds	Post-construction monitoring of mortality rates; carcass searches Methods are outlined in detail in this Environmental Effects Monitoring Plan	At 10 turbines MNR will be consulted to determine location of turbines to be monitored.	Conducted twice-weekly (3-4 day intervals) at 10 turbines from May 1-October 31. Monitoring to be conducted for three years.	Bats and Bat Habitats: Guidelines for Wind Power Projects, 2011	Annual Report will be submitted to MNR with the following anticipated dates: February 2015 February 2016 February 2017	Operational mitigation is required where annual post-construction mortality monitoring exceeds 10bats/turbine/year (MNR, 2011). Mitigation may include operational controls, such as periodic shut-down on select turbines or blade feathering at specific times of the year, or alternate plan agreed to by Suncor/MNR. MNR will be consulted on contingency measures to be implemented.
Disturbance Monitoring for Birds								
Disturbance to waterfowl nesting areas during operation	Post-construction Disturbance Monitoring Program	MNR, along with the proponent and other relevant agencies, will	Point count survey and area searches using pre-	In Features 6 or 20, if they are determined	Three times during the spring breeding season	Breeding pair density is a standard measure	Annual Report will be submitted	Should performance objectives not be met:

Table 1.2: Summary of Environmental Effects Monitoring Plan for Operation of the Suncor Adelaide Wind Energy Project

Potential Negative Effect	Mitigation Strategy	Performance Objective	Monitoring Plan					Contingency Measures
			Methods	Location	Frequency	Rationale	Reporting	
(Feature 6 and 20)	The breeding density of nesting waterfowl (combined and individual), within the habitat, will be monitored and compared to pre-construction conditions. In addition to density, the waterfowl nesting observed should be monitored and compared to pre-construction conditions. Particular attention should be paid to those species identified as waterfowl nesting area indicator species as per the draft SWH Ecoregion 7E Criterion Schedule (MNR, 2012), including: American Black Duck, Northern Pintail, Northern Shoveler, Gadwall, Blue-winged Teal, Green-winged Teal, Wood Duck, Hooded Merganser and Mallard.	collectively review the results of the post-construction monitoring to determine if an ecologically significant disturbance/avoidance effect to nesting waterfowl is occurring, and whether such effect is attributed to the wind turbines and not external factors. These discussions will determine whether contingency measures will be undertaken.	construction methods. Paired point counts extending from the base of wind turbine generators located within 120 m of waterfowl nesting areas with an equal number of paired point counts located more than 120 m from wind turbine generators in waterfowl nesting areas (i.e., control sites) Methods are outlined in detail in this Environmental Effects Monitoring Plan	to be significant as a result of habitat use studies.*	(April-June), with at least 10 days between surveys, annually for three years.	that can be compared among years or between control/impact sites.	to MNR with the following anticipated dates: February 2015 February 2016 February 2017	• Compare declines to population trends noted through province or continent-wide breeding bird surveys • develop additional studies to determine extent of disturbance effect • investigate habitat management means to increase breeding density Additional monitoring and/or mitigation may be required where post-construction monitoring identifies ecologically significant disturbance/avoidance effects associated with waterfowl nesting areas. Mitigation techniques may include (but are not limited to) operational controls, such as periodic shut-down and/or blade feathering. Results will be reviewed collectively by the proponent, MNR and other relevant agencies to determine if and when additional monitoring and/or mitigation is required. The best available science and information should be considered when determining appropriate mitigation. MNR will be consulted on contingency measures to be implemented.
Disturbance to marsh breeding bird species during operation (Features 6, 16 and 20)	Post-construction Disturbance Monitoring Program The breeding density of marsh species (combined and individual), within the habitat, will be monitored and compared to pre-construction conditions. In addition to density, the marsh breeding species observed should be monitored and compared to pre-construction conditions. Particular attention should be paid to those species identified as marsh breeding	MNR, along with the proponent and other relevant agencies, will collectively review the results of the post-construction monitoring to determine if an ecologically significant disturbance/avoidance effect to marsh breeding birds is occurring, and whether such effect is attributed to the wind turbines and not external factors. These discussions will determine whether contingency measures will be undertaken.	Point count survey and area searches using pre-construction methods. Paired point counts extending from the base of wind turbine generators located within 120 m of marsh habitat with an equal number of paired point counts located more than 120 m from wind turbine generators in marsh habitat (i.e., control sites). Methods are outlined in detail in this Environmental Effects Monitoring Plan	In Features 6, 16 or 20, if they are determined to be significant as a result of habitat use studies.*	Three times during the spring breeding season (May-June), with at least 10 days between surveys, annually for three years.	Breeding pair density is a standard measure that can be compared among years or between control/impact sites	Annual Report will be submitted to MNR with the following anticipated dates: February 2015 February 2016 February 2017	Should performance objectives not be met: • Compare declines to population trends noted through province or continent-wide breeding bird surveys • develop additional studies to determine extent of disturbance effect • investigate habitat management means to increase breeding density Additional monitoring and/or mitigation may be required where post-construction monitoring

Table 1.2: Summary of Environmental Effects Monitoring Plan for Operation of the Suncor Adelaide Wind Energy Project

Potential Negative Effect	Mitigation Strategy	Performance Objective	Monitoring Plan					Contingency Measures
			Methods	Location	Frequency	Rationale	Reporting	
	habitat indicator species as per the draft SWH Ecoregion 7E Criterion Schedule (MNR, 2012), including: American Bittern, Virginia Rail, Sora, Common Moorhen, American Coot, Pied-billed Grebe, Marsh Wren, Sedge Wren, Common Loon, Green Heron, Trumpeter Swan; and, Special Concern species including Black Tern and Yellow Rail.							identifies ecologically significant disturbance/avoidance effects associated with marsh breeding bird habitat. Mitigation techniques may include (but are not limited to) operational controls, such as periodic shut-down and/or blade feathering. Results will be reviewed collectively by the proponent, MNR and other relevant agencies to determine if and when additional monitoring and/or mitigation is required. The best available science and information should be considered when determining appropriate mitigation. MNR will be consulted on contingency measures to be implemented.
Disturbance to woodland area-sensitive breeding bird species during operation (Features 8 and 20)	Post-construction Disturbance Monitoring Program The breeding density of woodland area-sensitive species (combined and individual), within the habitat, will be monitored and compared to pre-construction conditions. In addition to density, the woodland area-sensitive species observed should be monitored and compared to pre-construction conditions. Particular attention should be paid to those species identified as woodland area-sensitive indicator species as per the draft SWH Ecoregion 7E Criterion Schedule (MNR, 2012), including: Yellow-bellied Sapsucker, Red-breasted Nuthatch, Veery, Blue-headed Vireo, Northern Parula, Black-throated Green Warbler, Blackburnian Warbler, Black-throated Blue Warbler, Ovenbird, Scarlet Tanager, Winter Wren and Pileated Woodpecker; and, Special Concern species Cerulean Warbler and	MNR, along with the proponent and other relevant agencies, will collectively review the results of the post-construction monitoring to determine if an ecologically significant disturbance/avoidance effect to woodland area-sensitive breeding birds is occurring, and whether such effect is attributed to the wind turbines and not external factors. These discussions will determine whether contingency measures will be undertaken.	Point count survey and area searches using pre-construction methods. Paired point counts extending from the base of wind turbine generators located within 120 m of woodland area-sensitive habitat with an equal number of paired point counts located more than 120 m from wind turbine generators in woodland area-sensitive habitat (i.e., control sites). Methods are outlined in detail in this Environmental Effects Monitoring Plan	In Features 8 and 20, as they are located within 120 m of Turbine 22 and 9, respectively.	Three times during the spring breeding season (May-June), with at least 10 days between surveys, annually for three years.	Breeding pair density is a standard measure that can be compared among years or between control/impact sites	Annual Report will be submitted to MNR with the following anticipated dates: February 2015 February 2016 February 2017	Should performance objectives not be met: • Compare declines to population trends noted through province or continent-wide breeding bird surveys • develop additional studies to determine extent of disturbance effect • investigate habitat management means to increase breeding density Additional monitoring and/or mitigation may be required where post-construction monitoring identifies ecologically significant disturbance/avoidance effects associated with woodland area-sensitive breeding bird habitat. Mitigation techniques may include (but are not limited to) operational controls, such as periodic shut-down and/or blade feathering. Results will be reviewed collectively by the proponent, MNR and other relevant agencies to determine if and when additional monitoring and/or mitigation is required. The best available science and information

Table 1.2: Summary of Environmental Effects Monitoring Plan for Operation of the Suncor Adelaide Wind Energy Project

Potential Negative Effect	Mitigation Strategy	Performance Objective	Monitoring Plan					Contingency Measures
			Methods	Location	Frequency	Rationale	Reporting	
	Canada Warbler.							should be considered when determining appropriate mitigation. MNR will be consulted on contingency measures to be implemented.
Disturbance to shrub/early successional breeding bird species during operation (Feature 13)	Post-construction Disturbance Monitoring Program The breeding density of shrubland species (combined and individual), within the habitat, will be monitored and compared to pre-construction conditions. In addition to density, the shrub/early successional species observed should be monitored and compared to pre-construction conditions. Particular attention should be paid to those species identified as shrub/early successional indicator species as per the draft SWH Ecoregion 7E Criterion Schedule (MNR, 2012), including: Brown Thrasher, Clay-coloured Sparrow, Field Sparrow, Black-billed Cuckoo, Eastern Towhee and Willow Flycatcher; and, Special Concern species including Yellow-breasted Chat and Golden-winged Warbler.	MNR, along with the proponent and other relevant agencies, will collectively review the results of the post-construction monitoring to determine if an ecologically significant disturbance/avoidance effect to shrub/early successional breeding birds is occurring, and whether such effect is attributed to the wind turbines and not external factors. These discussions will determine whether contingency measures will be undertaken.	Point count survey and area searches using pre-construction methods. Paired point counts extending from the base of wind turbine generators located within 120 m of shrub/early successional habitat with an equal number of paired point counts located more than 120 m from wind turbine generators in shrub/early successional habitat (i.e., control sites). Methods are outlined in detail in this Environmental Effects Monitoring Plan.	In Feature 13, if it is determined to be significant as a result of habitat use studies.*	Three times during the spring breeding season (May-June), with at least 10 days between surveys, annually for three years.	Breeding pair density is a standard measure that can be compared among years or between control/impact sites	Annual Report will be submitted to MNR with the following anticipated dates: February 2015 February 2016 February 2017	Should performance objectives not be met: • Compare declines to population trends noted through province or continent-wide breeding bird surveys • develop additional studies to determine extent of disturbance effect • investigate habitat management means to increase breeding density Additional monitoring and/or mitigation may be required where post-construction monitoring identifies ecologically significant disturbance/avoidance effects associated with shrub/early successional breeding bird habitat. Mitigation techniques may include (but are not limited to) operational controls, such as periodic shut-down and/or blade feathering. Results will be reviewed collectively by the proponent, MNR and other relevant agencies to determine if and when additional monitoring and/or mitigation is required. The best available science and information should be considered when determining appropriate mitigation. MNR will be consulted on contingency measures to be implemented.
Disturbance Monitoring for Amphibians								
Disturbance to amphibian woodland breeding habitat during operation (Features 6 and 20)	Post-construction Disturbance Monitoring Program The breeding density of woodland species (combined	MNR, along with the proponent and other relevant agencies, will collectively review the results of the post-construction monitoring to determine if an ecologically	Call count surveys using pre-construction methods, based on Marsh Monitoring Program protocol.	2 count stations (one within 120m of project location and one more than 120m) in each of Features 6	Once in each of April 1-15, May 1-15 and June 1-15, for one year post-construction.	Presence of calling amphibians in significant wildlife habitat (with consideration for pre-	Report will be submitted to MNR with the following anticipated date:	Where post-construction monitoring identifies ecologically significant disturbance effects to amphibians the proponent, MNR and other relevant agencies will

Table 1.2: Summary of Environmental Effects Monitoring Plan for Operation of the Suncor Adelaide Wind Energy Project

Potential Negative Effect	Mitigation Strategy	Performance Objective	Monitoring Plan					Contingency Measures
			Methods	Location	Frequency	Rationale	Reporting	
	and individual), within the habitat, will be monitored and compared to pre-construction conditions. In addition to density, the species observed should be monitored and compared to pre-construction conditions. Particular attention should be paid to those species identified as amphibian breeding habitat (woodland) indicator species as per the draft SWH Ecoregion 7E Criterion Schedule (MNR, 2012), including: Gray Treefrog; Spring Peeper; Western Chorus Frog; and, Wood Frog.	significant disturbance/avoidance effect to woodland breeding amphibians is occurring, and whether such effect is attributed to the access roads and not external factors. These discussions will determine whether contingency measures will be undertaken.	Methods are outlined in detail in this Environmental Effects Monitoring Plan.	and 20, if they are determined to be significant as a result of habitat use studies.*		construction species presence) – specialized habitat for wildlife within 120 m of project location.	February 2015	determine if and when additional monitoring and/or mitigation is required and work together to develop a contingency plan. The best available science and information should be considered when determining appropriate mitigation.
Disturbance to amphibian wetland breeding habitat during operation (Feature 16)	Post-construction Disturbance Monitoring Program The breeding density of wetland species (combined and individual), within the habitat, will be monitored and compared to pre-construction conditions. In addition to density, the species observed should be monitored and compared to pre-construction conditions. Particular attention should be paid to those species identified as amphibian breeding habitat (wetland) indicator species as per the draft SWH Ecoregion 7E Criterion Schedule (MNR, 2012), including: American Toad; Gray Treefrog; Western Chorus Frog; Northern Leopard Frog; Pickerel Frog; Green Frog; Mink Frog; and, Bull Frog.	MNR, along with the proponent and other relevant agencies, will collectively review the results of the post-construction monitoring to determine if an ecologically significant disturbance/avoidance effect to wetland breeding amphibians is occurring, and whether such effect is attributed to the access roads and not external factors. These discussions will determine whether contingency measures will be undertaken.	Call count surveys using pre-construction methods, based on Marsh Monitoring Program protocol. Methods are outlined in detail in this Environmental Effects Monitoring Plan.	2 count stations (one within 120m of project location and one more than 120m) in Feature 16, if it is determined to be significant as a result of habitat use studies.*	Once in each of April 1-15, May 1-15 and June 1-15, for one year post-construction.	Presence of calling amphibians in significant wildlife habitat (with consideration for pre-construction species presence) – specialized habitat for wildlife within 120 m of project location.	Report will be submitted to MNR with the following anticipated date: February 2015	Where post-construction monitoring identifies ecologically significant disturbance effects to amphibians the proponent, MNR and other relevant agencies will determine if and when additional monitoring and/or mitigation is required and work together to develop a contingency plan. The best available science and information should be considered when determining appropriate mitigation.

* 3 years of post-construction monitoring is required for the habitats that are determined to be significant through habitat use studies/pre-construction monitoring surveys, with the exception of significant amphibian woodland and wetland breeding habitats, which require 1 year post-construction monitoring.

APPENDIX C:
RENEWAL ENERGY APPROVAL

Stantec

Ontario

Ministry of the Environment
Ministère de l'Environnement

RENEWABLE ENERGY APPROVAL

NUMBER 8279-9AUP2B
Issue Date: December 11, 2013

Suncor Energy Products Inc.
150 6th Ave SW
Calgary, Alberta T2P 3E3

Project Location: North, East, and West of 2340 Egremont Drive, R.R. #5
Township of Adelaide-Metcalfe, County of Middlesex

You have applied in accordance with Section 47.4 of the Environmental Protection Act for approval to engage in a renewable energy project in respect of a Class 4 wind facility consisting of the following:

- the construction, installation, operation, use and retiring of a Class 4 wind facility with a total name plate capacity of 40 megawatts.

For the purpose of this renewable energy approval, the following definitions apply:

1. "Acoustic Assessment Report" means the report included in the Application and entitled "Noise Assessment Report", dated July 8, 2013, prepared by HGC Engineering, signed by Ian R. Bonsma, P.Eng and Brian Howe P.Eng;

2. "Acoustic Audit - Emission" means an investigative procedure that is compliant with the IEC Standard 61400-11 and consisting of measurements and/or acoustic modelling of noise emissions produced by wind turbine generators, assessed to determine compliance with the manufacturer's noise (acoustic) equipment specifications and emission data of the wind turbine generators, included in the Acoustic Assessment Report;

3. "Acoustic Audit - Immission" means an investigative procedure consisting of measurements and/or acoustic modelling of all sources of noise emissions due to the operation of the Equipment, assessed to determine compliance with the Noise Performance Limits set out in this Approval;

4. "Acoustic Audit Report-Emission" means a report presenting the results of the Acoustic Audit - Emission;

5. "Acoustic Audit Report-Immission" means a report presenting the results of the Acoustic Audit - Immission;

6. "Acoustic Audit - Transformer Substation" means an investigative procedure that is compliant with the IEEE Standard C57.12.90 consisting of measurements and/or acoustic modelling of all noise sources comprising the transformer substation assessed to determine compliance with the Sound Power Level specification of the transformer substation described in the Acoustic Assessment Report.

7. "Acoustic Audit Report - Transformer Substation" means a report presenting the results of the Acoustic Audit - Transformer Substation.

8. "Acoustical Consultant" means a person currently active in the field of environmental acoustics and noise/vibration control, who is knowledgeable about Ministry noise guidelines and procedures and has a combination of formal university education, training and experience necessary to assess noise emissions from wind facilities;

9. "Act" means the *Environmental Protection Act* , R.S.O 1990, c.E.19, as amended;

10. "Adverse Effect" has the same meaning as in the Act;

11. "Application" means the application for a Renewable Energy Approval dated November 28, 2012, and signed by Christopher Scott, Project Developer, Suncor Energy Products Inc., and all supporting documentation submitted with the application, including amended documentation submitted up to the date this Approval is issued;

12. "Approval" means this Renewable Energy Approval issued in accordance with Section 47.4 of the Act, including any schedules to it;

13. "A-weighting" means the frequency weighting characteristic as specified in the International Electrotechnical Commission (IEC) Standard 61672, and intended to approximate the relative sensitivity of the normal human ear to different frequencies (pitches) of sound. It is denoted as "A";

14. "A-weighted Sound Pressure Level" means the Sound Pressure Level modified by application of an A-weighting network. It is measured in decibels, A-weighted, and denoted "dBA";

15. "Class 1 Area" means an area with an acoustical environment typical of a major population centre, where the background sound level is dominated by the activities of people, usually road traffic, often referred to as "urban hum";

16. "Class 2 Area" means an area with an acoustical environment that has qualities representative of both Class 1 and Class 3 Areas:

    1. sound levels characteristic of Class 1 during daytime (07:00 to 19:00 or to 23:00 hours);

    2. low evening and night background sound level defined by natural environment and infrequent human activity starting as early as 19:00 hours (19:00 or 23:00 to 07:00 hours);

3. no clearly audible sound from stationary sources other than from those under impact assessment.

17. "Class 3 Area" means a rural area with an acoustical environment that is dominated by natural sounds having little or no road traffic, such as the following:

    1. a small community with less than 1000 population;

    2. agricultural area;

    3. a rural recreational area such as a cottage or a resort area; or

    4. a wilderness area.

18. "Company" means Suncor Energy Products Inc. and includes its successors and assignees;

19. "Compliance Protocol for Wind Turbine Noise" means the Ministry document entitled, Compliance Protocol for Wind Turbine Noise, Guideline for Acoustic Assessment and Measurement, PIBS# 8540e;

20. "Decibel" means a dimensionless measure of Sound Level or Sound Pressure Level, denoted as dB;

21. "Director" means a person appointed in writing by the Minister of the Environment pursuant to section 5 of the Act as a Director for the purposes of section 47.5 of the Act;

22. "District Manager" means the District Manager of the appropriate local district office of the Ministry where the Facility is geographically located;

23. "Equipment" means the eighteen (18) wind turbine generators and one (1) transformer substation, identified in this Approval and as further described in the Application, to the extent approved by this Approval;

24. "Equivalent Sound Level" is the value of the constant sound level which would result in exposure to the same total A-weighted energy as would the specified time-varying sound, if the constant sound level persisted over an equal time interval. It is denoted L_{eq} and is measured in dB A-weighting (dBA);

25. "Facility" means the renewable energy generation facility, including the Equipment, as described in this Approval and as further described in the Application, to the extent approved by this Approval;

26. "IEEE Standard C57.12.90" means the IEEE Standard Test Code for Liquid-Immersed Distribution, Power, and Regulating Transformers, 2010.

27. "IEC Standard 61400-11" means the International Standard IEC Standard 61400-11, Wind turbine generator systems – Part 11: Acoustic noise measurement techniques, 2006;

28. "Independent Acoustical Consultant" means an Acoustical Consultant who is not representing the Company and was not involved in preparing the Acoustic Assessment Report. The Independent Acoustical Consultant shall not be retained by the Acoustical Consultant involved in the noise impact assessment;

29. "Ministry" means the ministry of the government of Ontario responsible for the Act and includes all officials, employees or other persons acting on its behalf;

30. "Noise Guidelines for Wind Farms" means the Ministry document entitled, "Noise Guidelines for Wind Farms - Interpretation for Applying MOE NPC Publications to Wind Power Generation Facilities", dated October 2008;

31. "Noise Receptor" has the same meaning as in O. Reg. 359/09;

32. "Publication NPC-233" means Ministry Publication NPC-233, "Information to be Submitted for Approval of Stationary Sources of Sound", October 1995;

33. "O. Reg. 359/09" means Ontario Regulation 359/09 "Renewable Energy Approvals under Part V.0.1 of the Act" made under the Act;

34. "Point of Reception" has the same meaning as in the Noise Guidelines for Wind Farms and is subject to the same qualifications described in that document;

35. "Sound Level" means the A-weighted Sound Pressure Level;

36. "Sound Level Limit" is the limiting value described in terms of the one hour A-weighted Equivalent Sound Level L_{eq};

37. "Sound Power Level" means ten times the logarithm to the base of 10 of the ratio of the sound power (Watts) of a noise source to standard reference power of 10^{-12} Watts;

38. "Sound Pressure" means the instantaneous difference between the actual pressure and the average or barometric pressure at a given location. The unit of measurement is the micro pascal (μPa);

39. "Sound Pressure Level" means twenty times the logarithm to the base 10 of the ratio of the effective pressure (μPa) of a sound to the reference pressure of 20 μPa;

40. "UTM" means Universal Transverse Mercator coordinate system.

You are hereby notified that this approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

A - GENERAL

A1. The Company shall construct, install, use, operate, maintain and retire the Facility in accordance with the terms and conditions of this Approval and the Application and in accordance with the following schedules attached hereto:

SCHEDULE A - Facility Description
SCHEDULE B - Coordinates of the Equipment and Noise Specifications
SCHEDULE C - Noise Control Measures

A2. Where there is a conflict between a provision of this Approval and any document submitted by the Company, the conditions in this Approval shall take precedence. Where there is a conflict between one or more of the documents submitted by the Company, the document bearing the most recent date shall take precedence.

A3. The Company shall ensure a copy of this Approval is:

(1) accessible, at all times, by Company staff operating the Facility and;

(2) submitted to the clerk of each local municipality and upper-tier municipality in which the Facility is situated.

A4. If the Company has a publicly accessible website, the Company shall ensure that the Approval and the Application are posted on the Company's publicly accessible website within five (5) business days of receiving this Approval.

A5. The Company shall, at least six (6) months prior to the anticipated retirement date of the entire Facility, or part of the Facility, review its Decommissioning Plan Report to ensure that it is still accurate. If the Company determines that the Facility cannot be decommissioned in accordance with the Decommissioning Plan Report, the Company shall provide the Director and District Manager a written description of plans for the decommissioning of the Facility.

A6. The Facility shall be retired in accordance with the Decommissioning Plan Report and any directions provided by the Director or District Manager.

A7. The Company shall provide the Director and the District Manager at least ten (10) days written notice of the following:

(1) the commencement of any construction or installation activities at the project location; and

(2) the commencement of the operation of the Facility.

A8. The Company shall, at least six (6) months prior to the anticipated retirement date of the entire Facility, or part of the Facility, contact the Ministry of Agriculture, Food and Rural Affairs to discuss its plans for the decommissioning of the Facility, and follow any directions provided by that ministry in respect of the Company's plans to restore the project location to its previous agricultural capacity.

A9. As described in SCHEDULE A of the Approval, the Company shall not construct or operate more than eighteen (18) out of the twenty two (22) wind turbine generators identified in SCHEDULE B of the Approval;

B - EXPIRY OF APPROVAL

B1. Construction and installation of the Facility must be completed within three (3) years of the later of:

(1) the date this Approval is issued; or

(2) if there is a hearing or other litigation in respect of the issuance of this Approval, the date that this hearing or litigation is disposed of, including all appeals.

B2. This Approval ceases to apply in respect of any portion of the Facility not constructed or installed before the later of the dates identified in Condition B1.

C - NOISE PERFORMANCE LIMITS

C1. The Company shall ensure that:

(1) the Sound Levels from the Equipment, at the Points of Reception identified in the Acoustic Assessment Report, comply with the Sound Level Limits set in the Noise Guidelines for Wind Farms, as applicable, and specifically as stated in the table below:

Wind Speed (m/s) at 10 m height	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Sound Level Limits, dBA	40.0	40.0	40.0	43.0	45.0	49.0	51.0

(2) the Equipment is constructed and installed at either of the following locations:

a) at the locations identified in SCHEDULE B of this Approval; or

b) at a location that does not vary by more than 10 metres from the locations identified in SCHEDULE B of this Approval and provided that,

i) the Equipment will comply with Condition C1 (1); and

ii) all setback prohibitions established under O. Reg. 359/09 are complied with.

(3) the Equipment complies with the noise specifications set out in SCHEDULE B of this Approval.

C2. If the Company determines that some or all of the Equipment cannot be constructed in accordance with Condition C1 (2), prior to the construction and installation of the Equipment in question, the Company shall apply to the Director for an amendment to the terms and conditions of the Approval.

C3. Within three (3) months of the completion of the construction of the Facility, the Company shall submit to the Director a written confirmation signed by an individual who has the authority to bind the Company that the UTM coordinates of the "as constructed" Equipment comply with the requirements of Condition C1 (2).

D – CONFIRMATION OF VACANT LOT NOISE RECEPTORS

D1. The locations identified in Table A5 of the Acoustic Assessment Report as "Point of Reception ID" numbers 52, 54, 57, 62, 64, 65, 148, 269, 508, 552, 553, 555, 556, 557, 560, 565, 567, 569, 571, 574, 578, 579, 583, 585, 587, 588, 591, 592, 595, 596, 598, 599, 604, 610, 612, 614, 615, 617, 619, 626, 628, 630, 631, 632, 633, 634, 639, 642, 646, 647, 650, 651, 652, 653, 654, 656, 657, 659, 660, 661, 664, 665, 666, 667, 668, 669, 670, 697, 699, 704, 705, 706, 707, 709, 717, 718, 728, 742, 743, 750, 751, 752, 753, 754, 755, PV_442, PV_443, PV_444, PV_461, V_272, V_276, V_331, V_341, V_349, V_350, V_351, V_355, V_356, V_357, V_359, V_360, V_361, V_382, V_385, V_387, V_388, V_389, V_390, V_400, V_403, V_420 and V_460 are specified as Noise Receptors for the purposes of subsection 54 (1.1) of O. Reg. 359/09.

E - ACOUSTIC AUDIT - IMMISSION

E1. The Company shall carry out an Acoustic Audit - Immission of the Sound Levels produced by the operation of the Equipment in accordance with the following:

(1) the acoustic audit measurements shall be undertaken in accordance with Part D of the Compliance Protocol for Wind Turbine Noise;

(2) the acoustic audit measurements shall be performed by an Independent Acoustical Consultant at three (3) different Points of Reception that have been selected using the following criteria:

a) the Points of Reception should represent the location of the greatest predicted noise impact, i.e., the highest predicted Sound Level; and

b) the Points of Reception should be located in the direction of prevailing winds from the Facility;

(3) The acoustic audit measurements shall be performed on two (2) separate occasions;

(4) The acoustic audit measurements should be performed within a period of twelve (12) months.

E2. The Company shall submit to the Director and the District Manager an Acoustic Audit Report - Immission, prepared by an Independent Acoustical Consultant, at the following points in time:

(1) no later than nine (9) months after the commencement of the operation of the Facility for the first of the two (2) acoustic audit measurements at three (3) Points of Reception; and

(2) no later than sixteen (16) months after the commencement of the operation of the Facility for the second of the two (2) acoustic audit measurements at three (3) Points of Reception.

E3. The Company shall carry out an Acoustic Audit - Transformer Substation and shall submit to the Director and the District Manager an Acoustic Audit Report – Transformer Substation prepared by an Independent Acoustical Consultant, in accordance with the IEEE Standard C57.12.90 and Ministry Publication NPC-233 and no later than six (6) months after the commencement of the operation of the Facility.

F - ACOUSTIC AUDIT- EMISSION

F1. The Company shall carry out an Acoustic Audit - Emission of the acoustic emissions produced by the operation of the wind turbine generators in accordance with the following:

(1) the acoustic emission measurements shall be undertaken in accordance with the IEC Standard 61400-11;

(2) the acoustic emission measurements shall be performed by an Independent Acoustical Consultant; and

(3) the acoustic emission measurements shall be performed on two (2) of the wind turbine generators used in the Facility.

F2. The Company shall submit to the Director and the District Manager an Acoustic Audit Report-Emission, prepared in accordance with Section 9 of the IEC Standard 61400-11 by an Independent Acoustical Consultant, no later than nine (9) months after the commencement of the operation of the Facility.

G - WATER TAKING ACTIVITIES

G1. The Company shall not take more than 50,000 litres of water on any day by any means during the construction, installation, use, operation, maintenance and retiring of the Facility.

H - SEWAGE WORKS OF THE TRANSFORMER SUBSTATION SPILL CONTAINMENT FACILITY

H1. The Company shall design and construct a transformer substation oil spill containment facility which meets the following requirements:

(1) the spill containment facility serving the transformer substation shall have a minimum volume equal to the volume of transformer oil and lubricants plus the volume equivalent to providing a minimum 24-hour duration, 50-year return storm capacity for the stormwater drainage area around the transformer under normal operating conditions. This containment area shall have:

(a) an impervious floor with walls usually of reinforced concrete or impervious plastic liners, sloped toward an outlet / oil control device, allowing for a freeboard of 0.25 metres terminating approximately 0.30 metres above grade to prevent external stormwater flows from entering the facility. The facility shall have a minimum of 300mm layer of crushed stoned (19mm to 38mm in diameter) within, all as needed in accordance to site specific conditions and final design parameters; or

(b) a permeable floor with impervious plastic walls and around the transformer pad; equipped with subsurface drainage with a minimum 50mm diameter drain installed on a sand layer sloped toward an outlet for sample collection purposes; designed with an oil absorbent material on floor and walls, and allowing for a freeboard of 0.25 metres terminating approximately 0.30 metres above grade to prevent external stormwater flows from entering the facility. The facility's berm shall be designed as needed in accordance to site specific conditions and the facility shall have a minimum 300mm layer of crushed stoned (19mm to 38mm in diameter) on top of the system, as needed in accordance to site specific conditions and final design parameters.

(2) the spill containment facility shall be equipped with an oil detection system; it also shall have a minimum of two (2) PVC pipes (or equivalent material) 50mm diameter to allow for visual inspection of water accumulation. One pipe has to be installed half way from the transformer pad to the vehicle access route;

(3) the spill containment facility shall have appropriate sewage appurtenances as necessary, such as but not limited to: sump, oil/grit separator, pumpout manhole, level controllers, floating oil sensors, etc., that allows for batch discharges or direct discharges and for proper implementation of the monitoring program described under Condition H4; and

(4) the Company shall have a qualified person on-site during construction to ensure that the system is installed in accordance with the approved design and specifications.

H2. The Company shall:

(1) within six (6) months after the completion of the construction of the transformer substation spill containment facility, provide to the District Manager an engineering report and as-built design drawings of the sewage works for the spill containment facility and any stormwater management works required for it, signed and stamped by an independent Professional Engineer licensed in Ontario and competent in electrical and environmental engineering. The engineering report shall include the following;

(a) as-built drawings of the sewage works for the spill containment facility and any stormwater management works required for it;

(b) a written report signed by a qualified person confirming the following:

(i) on-site supervision during construction

(ii) in case of a permeable floor systems: type of oil absorbent material used (for mineral-based transformer oil or vegetable-based transformer oil, make and material's specifications)
(ii) use of stormwater best management practices applied to prevent external surface water runoff from entering the spill containment facility, and
(iv) confirm adequacy of the installation in accordance with specifications.

(c) confirmation of the adequacy of the operating procedures and the emergency procedures manuals as it pertains to the installed sewage works.

(d) procedures to provide emergency response to the site in the form of pumping and clean-up equipment within 24 hours after an emergency has been identified. Such response shall be provided even under adverse weather conditions to prevent further danger of material loss to the environment.

(2) as a minimum, the Company shall check the oil detection systems on a monthly basis and create a written record of the inspections;

(3) ensure that the effluent is essentially free of floating and settle-able solids and does not contain oil or any other substance in amounts sufficient to create a visible film, sheen or foam on the receiving waters;

(4) immediately identify and clean-up all losses of oil from the transformer;

(5) upon identification of oil in the spill containment facility, take immediate action to prevent the further occurrence of such loss;

(6) ensure that equipment and material for the containment, clean-up and disposal of oil and materials contaminated with oil are kept within easy access and in good repair for immediate use in the event of:

(a) loss of oil from the transformer,
(b) a spill within the meaning of Part X of the Act, or
(c) the identification of an abnormal amount of oil in the effluent.

(7) in the event of finding water accumulation in the PVC pipes (visual inspection) after 48 hrs of any storm event, the Company shall: (a) for impervious floors, inspect the sewage appurtenances that allow drainage of the concrete pit; or (b) for permeable systems, replace the oil absorbent material to ensure integrity of the system performance and design objectives.

(8) for permeable floor systems, the Company shall only use the type of oil specified in the design, i.e. mineral-based transformer oil or vegetable-based transformer oil. If a change is planned to modify the type of oil, the Company shall also change the type of the oil absorbent material and obtain approval from the Director to amend this Approval before any modification is implemented.

H3. The Company shall design, construct and operate the sewage works such that the concentration of the effluent parameter named in the table below does not exceed the maximum Concentration Objective shown for that parameter in the effluent, and shall comply with the following requirements:

Effluent Parameters	Maximum Concentration Objective
Oil and Grease	15mg/L

(1) notify the District Manager as soon as reasonably possible of any exceedance of the maximum concentration objective set out in the table above;

(2) take immediate action to identify the cause of the exceedance; and

(3) take immediate action to prevent further exceedances.

H4. Upon commencement of the operation of the Facility, the Company shall establish and carry out the following monitoring program for the sewage works:

(1) the Company shall collect and analyze the required set of samples at the sampling points listed in the table below in accordance with the measurement frequency and sample type specified for the effluent parameter, oil and grease, and create a written record of the monitoring:

Effluent Parameters	Measurement Frequency and Sample Points	Sample Type
Oil and Grease	Quarterly, i.e. four times over a year, relatively evenly spaced having a minimum two (2) of these samples taken within 48 hours after a 10mm rainfall event.	Grab

(2) in the event of an exceedance of the maximum concentration objective set out in the table in Condition H3, the Company shall:

(a) increase the frequency of sampling to once per month, for each month that effluent discharge occurs, and

(b) provide the District Manager, on a monthly basis, with copies of the written record created for the monitoring until the District Manager provides written direction that monthly sampling and reporting is no longer required; and

(3) if over a period of twenty-four (24) months of effluent monitoring under Condition H4, there are no exceedances of the maximum concentration set out in the table for Concentration Objective, the Company may reduce the measurement frequency of effluent monitoring to a frequency as the District Manager may specify in writing, provided that the new specified frequency is never less than annual.

(4) the Company shall, in the event of an exceedance of the maximum Concentration Objective set out in the table under Condition H3, increase the frequency of sampling to once per month and provide the District Manager, with copies of the written record created for the monitoring until the District Manager provides written direction that monthly sampling is no longer required.

H5. The Company shall comply with the following methods and protocols for any sampling, analysis and recording undertaken in accordance with Condition H4:

(1) Ministry of the Environment publication "Protocol for the Sampling and Analysis of Industrial/ Municipal Wastewater", January 1999, as amended from time to time by more recently published editions, and

(2) the publication "Standard Methods for the Examination of Water and Wastewater", 21st edition, 2005, as amended from time to time by more recently published editions.

I – NATURAL HERITAGE

General

I1. The Company shall implement the Environmental Effects Monitoring Plan for the Suncor Energy Adelaide Wind Power Project, titled Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitat, dated July 2012, and the commitments made in the following reports and included in the Application, and in which the Company submitted to the Ministry of Natural Resources in order to comply with O. Reg. 359/09:

(1) *Suncor Energy Adelaide Wind Power Project Natural Heritage Assessment and Environmental Impact Study* dated July 2012 and prepared by Stantec Consulting Limited for Suncor Energy Products Inc.

(2) *Suncor Energy Adelaide Wind Project Addendum 1* letter report dated October 2012 prepared by Stantec Consulting Limited for Suncor Energy Products Inc.

(3) Memo titled *Suncor Energy Adelaide Minor Modifications* dated February 2013 and prepared by Stantec Consulting Limited for Suncor Energy Products Inc.

(4) Memo titled *Suncor Energy Adelaide Wind Power Project Modifications* dated November 5, 2013 and prepared by Stantec Consulting Limited for Suncor Energy Products Inc.

I2. If the Company determines that it must deviate from either the Environmental Effects Monitoring Plan or the Environmental Impact Study and Addendum or minor modifications thereto, described in Condition I1, the Company shall contact the Ministry of Natural Resources and the Director, prior to making any changes to the Environmental Effects Monitoring Plan or the Environmental Impact Study and Addendum or minor modifications thereto, and follow any directions provided.

Post Construction Monitoring - Significant Wildlife Habitat

I3. The Company shall implement the post-construction monitoring described in the Environmental Effects Monitoring Plan and the Environmental Impact Study, described in Condition I1, including the following:

(1) Disturbance monitoring of amphibian breeding habitat woodland for features 6 and 20,

(2) Disturbance monitoring of amphibian breeding habitat wetland for feature 16.

Post Construction Monitoring - Birds and Bats Mortality Monitoring

I4. The company shall implement the post-construction bird and bat mortality monitoring described in the Environmental Effects Monitoring Plan, described in Condition I1, at a minimum of 10 of 18 constructed turbines.

Thresholds and Mitigation

I5. The Company shall contact the Ministry of Natural Resources and the Director if any of the following bird and bat mortality thresholds, as stated in the Environmental Effects Monitoring Plan for the Suncor Energy Adelaide Wind Power Project described in Condition I1, are reached or exceeded:

(1) 10 bats per turbine per year;

(2) 14 birds per turbine per year at individual turbines or turbine groups;

(3) 0.2 raptors per turbine per year (all raptors) across a wind power project;

(4) 0.1 raptors per turbine per year (provincially tracked raptors) across the wind power project;

(5) 10 or more birds at any one turbine during a single monitoring survey; or

(6) 33 or more birds (including raptors) at multiple turbines during a single monitoring survey.

I6. If the bat mortality threshold described in Condition I5(1) is reached or exceeded, the Company shall:

(1) implement operational mitigation measures consistent with those described in the Ministry of Natural Resources publication entitled "Bats and Bat Habitats: Guidelines for Wind Power Projects" dated July 2011, or in an amended version of the publication including:

(a) increase cut-in speed to 5.5 m/s or feather wind turbine blades when wind speeds are below 5.5 m/s between sunset and sunrise, from July 15 to September 30 at all turbines, for the operating life of the Facility; and

(2) implement an additional three (3) years of effectiveness monitoring.

I7. If the bat mortality threshold described in Condition I5(1) is reached or exceeded after operational mitigation is implemented in accordance with Condition I6, the Company shall prepare and implement a contingency plan, in consultation with the Ministry of Natural Resources, to address mitigation actions which shall include additional mitigation and scoped monitoring requirements.

I8. If either of the bird mortality thresholds described in Conditions I5(2) or I5(3) or I5(4) is reached or exceeded, the Company shall conduct two (2) years of subsequent scoped mortality monitoring and cause and effects monitoring. Following the completion of scoped monitoring, the Company shall implement operational mitigation for the operating life of the Facility, and effectiveness monitoring at individual turbines, for the first three (3) years following the implementation of mitigation.

I9. If either of the bird mortality thresholds described in Conditions I5(5) or I5(6) is reached or exceeded, the Company shall prepare and implement a contingency plan to address immediate mitigation actions which shall include:

(1) periodic shut-down of select turbines;

(2) blade feathering at specific times of year; or

(3) an alternate plan agreed to between the Company and the Ministry of Natural Resources.

I10. If either of the bird mortality thresholds described in Conditions I5(2) or I5(3) or I5(4) is reached or exceeded while monitoring is being implemented in accordance with Condition I8, or if either of the bird mortality thresholds described in Conditions I5(5) or I5(6) is reached or exceeded after mitigation is implemented in accordance with Condition I9, the Company shall contact the Ministry of Natural Resources and prepare and implement an appropriate response plan that shall include some or all of the following mitigation measures:

(1) increased reporting frequency to identify potential threshold exceedance;

(2) additional behavioural studies to determine factors affecting mortality rates;

(3) periodic shut-down of select turbines;

(4) blade feathering at specific times of year; or

(5) an alternate plan agreed to between the Company and the Ministry of Natural Resources.

Reporting and Review of Results

I11. The Company shall report, in writing, the results of the post-construction disturbance monitoring described in Conditions I3, to the Ministry of Natural Resources for three (3) years on an annual basis and within three (3) months of the end of each calendar year in which the monitoring took place.

I12. The Company shall report, in writing, bird and bat mortality levels to the Ministry of Natural Resources for three (3) years on an annual basis and within three (3) months of the conclusion of the November mortality monitoring, with the exception of the following:

(1) if either of the bird mortality thresholds described in Conditions I5(5) or I5(6) is reached or exceeded, the Company shall report the mortality event to the Ministry of Natural Resources within 48 hours of observation;

(2) for any and all mortality of species at risk (including a species listed on the Species at Risk in Ontario list as Extirpated, Endangered or Threatened under the provincial Endangered Species Act, 2007) that occurs, the Company shall report the mortality to the Ministry of Natural Resources within 24 hours of observation or the next business day;

(3) if the bat mortality threshold described in Condition I5(1) is reached or exceeded, the Company shall report mortality levels to the Ministry of Natural Resources for the additional three (3) years of monitoring described in Condition I6, on an annual basis and within three (3) months of the conclusion of the October mortality monitoring for each year;

(4) if either of the bird mortality thresholds described in Conditions I5(2) or I5(3) or I5(4) is reached or exceeded in the project area, the Company shall report mortality levels to the Ministry of Natural Resources for the additional two (2) years of cause and effects monitoring described in Condition I8, on an annual basis and within three (3) months of the conclusion of the November mortality monitoring for each year; and

(5) if the Company implements operational mitigation in accordance with Condition I8, the Company shall report mortality levels to the Ministry of Natural Resources for the three (3) years of subsequent effectiveness monitoring described in Condition I8, on an annual basis and within three (3) months of the conclusion of the November mortality monitoring for each year.

J - STORMWATER MANAGEMENT

J1. The Company shall employ best management practices for stormwater management and sediment and erosion control during construction, installation, use, operation, maintenance and retiring of the Facility, as described in the Application.

K - SURFACE WATER

K1. Within one year of the completion of the construction of the Facility, the Company must provide the District Manager, in writing, a description of post-construction surface water quality conditions and a written description of any additional remediation works required. The written description shall include surface water conditions during the freshet period occurrence in the first Spring following the construction of the Facility.

L - TRAFFIC MANAGEMENT PLANNING

L1. Within three (3) months of receiving this Approval, the Company shall prepare a Traffic Management Plan and provide it to the Township of Adelaide-Metcalfe and the County of Middlesex.

L2. Within three (3) months of having provided the Traffic Management Plan to the Township of Adelaide-Metcalfe and the County of Middlesex, the Company shall make reasonable efforts to enter into a Road Users Agreement with the Township of Adelaide-Metcalfe and the County of Middlesex.

L3. If a Road Users Agreement has not been signed with the Township of Adelaide-Metcalfe and the County of Middlesex within three (3) months of having provided the Traffic Management Plan to the Township of Adelaide-Metcalfe and the County of Middlesex, the Company shall provide a written explanation to the Director as to why this has not occurred.

M - ARCHAEOLOGICAL RESOURCES

M1. The Company shall implement all of the recommendations, if any, for further archaeological fieldwork and for the protection of archaeological sites found in the consultant archaeologist's report included in the Application, and which the Company submitted to the Ministry of Tourism, Culture and Sport in order to comply with O. Reg. 359/09.

M2. Should any previously undocumented archaeological resources be discovered, the Company shall:

(1) cease all alteration of the area in which the resources were discovered immediately;

(2) engage a consultant archaeologist to carry out the archaeological fieldwork necessary to further assess the area and to either protect and avoid or excavate any sites in the area in accordance with the *Ontario Heritage Act* , the regulations under that act and the Ministry of Tourism, Culture and Sport's *Standards and Guidelines for Consultant Archaeologists* ; and

(3) notify the Director as soon as reasonably possible.

N - COMMUNITY LIAISON COMMITTEE

N1. Within three (3) months of receiving this Approval, the Company shall make reasonable efforts to establish a Community Liaison Committee. The Community Liaison Committee shall be a forum to exchange ideas and share concerns with interested residents and members of the public. The Community Liaison Committee shall be established by:

(1) publishing a notice in a newspaper with general circulation in each local municipality in which the project location is situated; and

(2) posting a notice on the Company's publicly accessible website, if the Company has a website;

to notify members of the public about the proposal for a Community Liaison Committee and invite residents living within a one (1) kilometer radius of the Facility that may have an interest in the Facility to participate on the Community Liaison Committee.

N2. The Company may invite other members of stakeholders to participate in the Community Liaison Committee, including, but not limited to, local municipalities, local conservation authorities, Aboriginal communities, federal or provincial agencies, and local community groups.

N3. The Community Liaison Committee shall consist of at least one Company representative who shall attend all meetings.

N4. The purpose of the Community Liaison Committee shall be to:

(1) act as a liaison facilitating two way communications between the Company and members of the public with respect to issues relating to the construction, installation, use, operation, maintenance and retirement of the Facility;

(2) provide a forum for the Company to provide regular updates on, and to discuss issues or concerns relating to, the construction, installation, use, operation, maintenance and retirement of the Facility with members of the public; and

(3) ensure that any issues or concerns resulting from the construction, installation, use, operation, maintenance and retirement of the Facility are discussed and communicated to the Company.

N5. The Community Liaison Committee shall be deemed to be established on the day the Director is provided with written notice from the Company that representative Community Liaison Committee members have been chosen and a date for a first Community Liaison Committee meeting has been set.

N6. If a Community Liaison Committee has not been established within three (3) months of receiving this Approval, the Company shall provide a written explanation to the Director as to why this has not occurred.

N7. The Company shall ensure that the Community Liaison Committee operates for a minimum period of two (2) years from the day it is established. During this two (2) year period, the Company shall ensure that the Community Liaison Committee meets a minimum of two (2) times per year. At the end of this two (2) year period, the Company shall contact the Director to discuss the continued operation of the Community Liaison Committee.

N8. The Company shall ensure that all Community Liaison Committee meetings are open to the general public.

N9. The Company shall provide administrative support for the Community Liaison Committee including, at a minimum:

(1) providing a meeting space for Community Liaison Committee meetings;

(2) providing access to resources, such as a photocopier, stationery, and office supplies, so that the Community Liaison Committee can:

a) prepare and distribute meeting notices;

b) record and distribute minutes of each meeting; and

c) prepare reports about the Community Liaison Committee's activities.

N10. The Company shall submit any reports of the Community Liaison Committee to the Director and post it on the Company's publicly accessible website, if the Company has a website.

O - OPERATION AND MAINTENANCE

O1. Prior to the commencement of the operation of the Facility, the Company shall prepare a written manual for use by Company staff outlining the operating procedures and a maintenance program for the Equipment that includes as a minimum the following:

(1) routine operating and maintenance procedures in accordance with good engineering practices and as recommended by the Equipment suppliers;

(2) emergency procedures;

(3) procedures for any record keeping activities relating to operation and maintenance of the Equipment; and

(4) all appropriate measures to minimize noise emissions from the Equipment.

O2. The Company shall;

(1) update, as required, the manual described in Condition O1; and

(2) make the manual described in Condition O1 available for review by the Ministry upon request.

O3. The Company shall ensure that the Facility is operated and maintained in accordance with the Approval and the manual described in Condition O1.

P - RECORD CREATION AND RETENTION

P1. The Company shall create written records consisting of the following:

(1) an operations log summarizing the operation and maintenance activities of the Facility;

(2) within the operations log, a summary of routine and Ministry inspections of the Facility; and

(3) a record of any complaint alleging an Adverse Effect caused by the construction, installation, use, operation, maintenance or retirement of the Facility.

P2. A record described under Condition P1 (3) shall include:

(1) a description of the complaint that includes as a minimum the following:

a) the date and time the complaint was made;

b) the name, address and contact information of the person who submitted the complaint;

(2) a description of each incident to which the complaint relates that includes as a minimum the following:

a) the date and time of each incident;

b) the duration of each incident;

c) the wind speed and wind direction at the time of each incident;

d) the ID of the Equipment involved in each incident and its output at the time of each incident;

e) the location of the person who submitted the complaint at the time of each incident; and

(3) a description of the measures taken to address the cause of each incident to which the complaint relates and to prevent a similar occurrence in the future.

P3. The Company shall retain, for a minimum of five (5) years from the date of their creation, all records described in Condition P1, and make these records available for review by the Ministry upon request.

Q - NOTIFICATION OF COMPLAINTS

Q1. The Company shall notify the District Manager of each complaint within two (2) business days of the receipt of the complaint.

Q2. The Company shall provide the District Manager with the written records created under Condition P2 within eight (8) business days of the receipt of the complaint.

Q3. If the Company receives a complaint related to groundwater, the Company shall contact the District Manager within one (1) business day of the receipt of the complaint to discuss appropriate measures to manage any potential groundwater issues.

R - CHANGE OF OWNERSHIP

R1. The Company shall notify the Director in writing, and forward a copy of the notification to the District Manager, within thirty (30) days of the occurrence of any of the following changes:

(1) the ownership of the Facility;

(2) the operator of the Facility;

(3) the address of the Company;

(4) the partners, where the Company is or at any time becomes a partnership and a copy of the most recent declaration filed under the *Business Names Act* , R.S.O. 1990, c.B.17, as amended, shall be included in the notification; and

(5) the name of the corporation where the Company is or at any time becomes a corporation, other than a municipal corporation, and a copy of the most current information filed under the *Corporations Information Act* , R.S.O. 1990, c. C.39, as amended, shall be included in the notification.

S – ABORIGINAL CONSULTATION

S1. During the construction, installation, operation, use and retiring of the Facility, the Company shall:

(1) create and maintain written records of any communications with Aboriginal communities; and

(2) make the written records available for review by the Ministry upon request.

S2. The Company shall provide the following to interested Aboriginal communities:

(1) updated project information, including the results of monitoring activities undertaken and copies of additional archaeological assessment reports that may be prepared; and;

(2) updates on key steps in the construction, installation, operation, use and retirement phases of the Facility, including notice of the commencement of construction activities at the project location.

S3. If an Aboriginal community requests a meeting to obtain information relating to the construction, installation, operation, use and retiring of the Facility, the Company shall make reasonable efforts to arrange and participate in such a meeting.

S4. If any archaeological resources of Aboriginal origin are found during the construction of the Facility, the Company shall:

(1) notify any Aboriginal community considered likely to be interested or which has expressed an interest in such finds; and,

(2) if a meeting is requested by an Aboriginal community to discuss the archaeological find(s), make reasonable efforts to arrange and participate in such a meeting.

T – ENDANGERED SPECIES ACT REQUIREMENTS

T1. No construction or installation activities shall be commenced in areas at the project location that support habitat for Bobolink and Eastern Meadowlark until the Company has met all requirements under the *Endangered Species Act, 2007.*

SCHEDULE A

Facility Description

The Facility shall consist of the construction, installation, operation, use and retiring of the following:

(a) a total of eighteen (18) out of twenty two (22) Siemens SWT-2.3-113 wind turbine generators each rated at a maximum of 2.221 megawatts (MW) generating output capacity with a maximum total name plate capacity of 40 megawatts (MW), each with a hub height of 99.5 metres above grade, and sited at the locations shown in SCHEDULE B, in accordance with Condition C1(2)(b); and

(b) associated ancillary equipment, systems and technologies including one (1) 62 megavolt-ampere (MVA) transformer substation, on-site access roads, underground cabling and overhead distribution lines,

all in accordance with the Application.

SCHEDULE B
Coordinates of the Equipment and Noise Specifications

Table B1: Coordinates and Maximum Sound Power Levels of Wind Turbine Generators and Transformer Substation
(Coordinates of the Equipment below in UTM, Z17-NAD83 projection)

Source ID	Maximum Sound Power Level (dBA)	Easting (metres)	Northing (metres)	Source Description
WTG05	104.0	451,199	4,762,373	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG06	104.0	451,980	4,762,609	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG07	104.0	449,661	4,762,144	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG08	104.0	451,156	4,763,377	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG09	104.0	449,734	4,763,094	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG11	104.0	449,148	4,763,621	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG12	104.0	447,877	4,763,360	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG13	104.0	447,187	4,762,975	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG14	104.0	447,170	4,764,853	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG15	104.0	446,096	4,765,010	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG16	104.0	445,133	4,765,332	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG17	104.0	444,507	4,765,066	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG18	104.0	443,799	4,765,061	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG19	104.0	442,948	4,764,967	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG20	104.0	440,256	4,765,227	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG21	104.0	439,160	4,763,535	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG22	104.0	438,309	4,763,209	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG23	104.0	438,309	4,763,703	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG24	104.0	436,172	4,763,648	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG26	104.0	436,111	4,764,848	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG27	104.0	435,962	4,765,466	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
WTG28	104.0	435,864	4,766,263	Wind Turbine (Siemens 2.3-113) 2.221MW, 99.5m hub height
TS1	100.8	439,770	4,763,131	Transformer Substation, 62 MVA, See Table B2

Table B2: Maximum Sound Power Spectrum of Transformer Substation

Transformer Substation	1/1 Octave Band Centre Frequency (Hz)							
	63	**125**	**250**	**500**	**1000**	**2000**	**4000**	**8000**
Sound Power Level (dB Lin)	103.4	105.4	100.4	100.4	94.4	89.4	84.4	77.4

Note: The Maximum Sound Power Level of Transformer Substation (Source ID "TS1") includes the applicable 5 dB tonal adjustment described in the Noise Guidelines for Wind Farms.

SCHEDULE C
Noise Control Measures

Acoustic Barrier

One (1) 15 metres long, 6 metres high, L-shaped acoustic barrier, positioned as per Figure 3 of the Acoustic Assessment Report. The acoustic barrier shall be continuous without holes, gaps and other penetrations, and having a surface mass density of at least 20 kilograms per square metres.

The reasons for the imposition of these terms and conditions are as follows:

1. Conditions A1, A2 and A9 are included to ensure that the Facility is constructed, installed, used, operated, maintained and retired in the manner in which it was described for review and upon which Approval was granted. These conditions are also included to emphasize the precedence of conditions in the Approval and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review.

2. Conditions A3 and A4 are included to require the Company to provide information to the public and the local municipality.

3. Conditions A5 and A6 are included to ensure that final retirement of the Facility is completed in an aesthetically pleasing manner, in accordance with Ministry standards, and to ensure long-term protection of the health and safety of the public and the environment.

4. Condition A7 is included to require the Company to inform the Ministry of the commencement of activities related to the construction, installation and operation of the Facility.

5. Condition B is intended to limit the time period of the Approval.

6. Condition C1 is included to provide the minimum performance requirement considered necessary to prevent an Adverse Effect resulting from the operation of the Equipment and to ensure that the noise emissions from the Equipment will be in compliance with applicable limits set in the Noise Guidelines for Wind Farms.

7. Conditions A8, C2, C3 and D are included to ensure that the Equipment is constructed, installed, used, operated, maintained and retired in a way that meets the regulatory setback prohibitions set out in O. Reg. 359/09.

8. Conditions E and F are included to require the Company to gather accurate information so that the environmental noise impact and subsequent compliance with the Act, O. Reg. 359/09, the Noise Guidelines for Wind Farms and this Approval can be verified.

9. Conditions G, H, I, J, K, L and T are included to ensure that the Facility is constructed, installed, used, operated, maintained and retired in a way that does not result in an Adverse Effect or hazard to the natural environment or any persons.

10. Condition M is included to protect archaeological resources that may be found at the project location.

11. Condition N is included to ensure continued communication between the Company and the local residents.

12. Condition O is included to emphasize that the Equipment must be maintained and operated according to a procedure that will result in compliance with the Act, O. Reg. 359/09 and this Approval.

13. Condition P is included to require the Company to keep records and provide information to the Ministry so that compliance with the Act, O. Reg. 359/09 and this Approval can be verified.

14. Condition Q is included to ensure that any complaints regarding the construction, installation, use, operation, maintenance or retirement of the Facility are responded to in a timely and efficient manner.

15. Condition R is included to ensure that the Facility is operated under the corporate name which appears on the application form submitted for this Approval and to ensure that the Director is informed of any changes.

16. Condition S is included to ensure continued communication between the Company and interested Aboriginal communities.

NOTICE REGARDING HEARINGS

In accordance with Section 139 of the Environmental Protection Act, within 15 days after the service of this notice, you may by further written notice served upon the Director, the Environmental Review Tribunal and the Environmental Commissioner, require a hearing by the Tribunal.

In accordance with Section 47 of the Environmental Bill of Rights, 1993, the Environmental Commissioner will place notice of your request for a hearing on the Environmental Registry.

Section 142 of the Environmental Protection Act provides that the notice requiring the hearing shall state:

1. The portions of the renewable energy approval or each term or condition in the renewable energy approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The signed and dated notice requiring the hearing should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The renewable energy approval number;
6. The date of the renewable energy approval;
7. The name of the Director;
8. The municipality or municipalities within which the project is to be engaged in;

This notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, 15th Floor
Toronto, Ontario
M5G 1E5

AND

The Environmental Commissioner
1075 Bay Street, 6th Floor
Suite 605
Toronto, Ontario
M5S 2B1

AND

The Director
Section 47.5, *Environmental Protection Act*
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

Under Section 142.1 of the Environmental Protection Act, residents of Ontario may require a hearing by the Environmental Review Tribunal within 15 days after the day on which notice of this decision is published in the Environmental Registry. By accessing the Environmental Registry at www.ebr.gov.on.ca , you can determine when this period ends.

Approval for the above noted renewable energy project is issued to you under Section 47.5 of the Environmental Protection Act subject to the terms and conditions outlined above.

DATED AT TORONTO this 11th day of December, 2013

Vic Schroter, P.Eng.
Director
Section 47.5, *Environmental Protection Act*

NC/
c: District Manager, MOE London - District
Mark Kozak, Stantec Consulting Inc.

APPENDIX D
RAPTOR MONITORING PROTOCOL

Stantec

From: Taylor, Andrew
To: Mark Kozak; Straus, Melissa
Subject: Fwd: Stantec FTP Confirmation - ADELAIDE 2015 ANNUAL POST-CON REPORT
Date: Thursday, June 23, 2016 1:36:24 PM

Adelaide raptor protocol approved!

Sent from my iPhone

Begin forwarded message:

> **From:** "Valliant, Emma (MNRF)" <Emma.Valliant@ontario.ca>
> **Date:** June 23, 2016 at 1:34:00 PM EDT
> **To:** "Taylor, Andrew" <andrew.taylor@stantec.com>
> **Cc:** "Valliant, Emma (MNRF)" <Emma.Valliant@ontario.ca>, "Beal, Jim (MNRF)" <jim.beal@ontario.ca>
> **Subject: RE: Stantec FTP Confirmation - ADELAIDE 2015 ANNUAL POST-CON REPORT**
>
> Hi Andrew,
> All that sounds good! Thanks.
> Emma
> Emma Valliant
> A/Regional Planning Ecologist
> 705-755-5393
>
> ---
>
> **From:** Taylor, Andrew [mailto:andrew.taylor@stantec.com]
> **Sent:** June 17, 2016 2:06 PM
> **To:** Valliant, Emma (MNRF)
> **Cc:** Beal, Jim (MNRF)
> **Subject:** RE: Stantec FTP Confirmation - ADELAIDE 2015 ANNUAL POST-CON REPORT
> Hi Emma,
> Thank you very much for your review and comments on the Adelaide cause and effect Raptor Monitoring Plan. Please see below responses to your comments. We have also updated to Raptor Monitoring Protocol to address the changes (attached).
> Please let me know if you approve of these changes to the Plan, or if you have further comments.
> Thanks,
> Andrew
>
> ---
>
> **From:** Valliant, Emma (MNRF) [mailto:Emma.Valliant@ontario.ca]
> **Sent:** Wednesday, June 01, 2016 9:26 AM
> **To:** Taylor, Andrew
> **Cc:** Valliant, Emma (MNRF); Beal, Jim (MNRF)
> **Subject:** RE: Stantec FTP Confirmation - ADELAIDE 2015 ANNUAL POST-CON REPORT
> Hi Andrew,
> As the file is too large to send back (and I haven't completed the review of the rest of the report), here are my comments on Appendix I: Raptor Monitoring Protocol.
> <!--[if !supportLists]-->1.0 <!--[endif]-->Introduction
> One additional raptor, an Osprey, was recovered during the supplemental monthly monitoring program.
> Comment: Field notes and email indicate that this was found during the monthly raptor monitoring in June. Please include this mortality in the corrected mortality estimate for raptors. The rest of the report will also need to be revised.

Stantec Response:
Carcasses found during the monthly raptor surveys at non-subset turbines are typically not included in the correction calculation. In part, because the non-subset turbines do not have associated correction factors (e.g. Ps). The correction calculation take non-subset turbine into account when determining annual mortality rates.

3.1 Scoped Mortality Monitoring

Monitoring at the non-subset turbines should be increased to weekly for May-July (instead of twice per month).

Stantec Response:
Stantec will increase the monitoring at non-subset turbines from once every two weeks to once weekly. The Raptor Monitoring Protocol has been revised accordingly.
For 2016, the increase frequency to once weekly started first week of June (i.e. week starting June 6).

3.2 Cause and Effect Monitoring

Scavenger removal trials should be conducted to determine if any raptors are being removed by scavengers.

Stantec Response:
Please note the cause and effect monitoring will not include a correction calculation. Although the annual mortality rates for raptors will continue to be calculated through the regular EEMP monitoring.
The purpose of the cause and effect monitoring is to provide a comprehensive spatial distribution of raptor fatality, which can be compared to the habitat mapping, to assess habitat based risk factors. Additionally, carcasses persistence of raptor is generally very high. As such, we would expect any scavenging over the one week search interval to be very minimal.
Regardless, Stantec can include raptor carcasses in the EEMP scavenger trials to confirm if raptor scavenging is occurring. We will aim to use up to three raptor carcasses each year. However, given raptor carcasses in suitable conditions are limited, the number of raptors in the scavenger trials may be less than three.
The Raptor Monitoring Protocol has been revised accordingly.

Please include behavioural monitoring. Visual monitoring of the raptors should be done to try to determine what their behaviour is and how the turbines can be mitigated appropriately.

Behavioural surveys have been added to the protocol, with weekly surveys in May, June and July. The surveys will monitoring active nests, with notes being made on activity of the nest and observations of raptor movements and behaviour. Each behaviour observed (and duration of time spent per behaviour) and flight heights will be recorded. Each flight path observed and any perches used will be identified and mapped in relation to turbine locations.
The results of the surveys will be used to identify raptor behavior in proximity to wind turbines including flight patterns, flight heights and identify perching and foraging habitat.
The Raptor Monitoring Protocol has been revised accordingly.
For 2016, the behavioral surveys started the first week of June (i.e. week starting June 6).

3.2.1 Background Review

To clarify, are you essentially doing a records review for the time period since construction started until now?

Correct. The NHA (including the Record Review) was authored in 2012. The intent of the background review is to complete a more current review of records. The background review will focus on sources that may include information regarding raptor nests, such as ebirds, which was not part of the original NHA Records Review. Note that ebirds maps species occurrences, that do not necessarily reflect nesting locations. However, a review of occurrence date and location can provide potential nest site that can be confirmed through the field surveys.

Please let me know if you have any comments.

Cheers,

Emma

Emma Valliant
A/Regional Planning Ecologist

705-755-5393

From: Taylor, Andrew [mailto:andrew.taylor@stantec.com]
Sent: May 18, 2016 9:10 AM
To: Valliant, Emma (MNRF)
Subject: RE: Stantec FTP Confirmation - ADELAIDE 2015 ANNUAL POST-CON REPORT

Thanks Emma!

From: Valliant, Emma (MNRF) [mailto:Emma.Valliant@ontario.ca]
Sent: Wednesday, May 18, 2016 8:55 AM
To: Taylor, Andrew
Subject: RE: Stantec FTP Confirmation - ADELAIDE 2015 ANNUAL POST-CON REPORT

'Morning Andrew,
I clicked on the link this morning, and the pdfs have been removed and the report is there. I'll take a look at it. Thanks!
Emma

From: Taylor, Andrew [mailto:andrew.taylor@stantec.com]
Sent: May 16, 2016 4:21 PM
To: Valliant, Emma (MNRF)
Subject: RE: Stantec FTP Confirmation - ADELAIDE 2015 ANNUAL POST-CON REPORT

Hi Emma,
Through those emails, you should have all components of the report, except for Appendix G, a scan of all field forms. This appendix was much too large to provide over email. But I will work on sorting out the issue on our ftp site.
Please let me know if you got everything, or if you are still missing any components.
Thanks,
Andrew

From: Valliant, Emma (MNRF) [mailto:Emma.Valliant@ontario.ca]
Sent: Monday, May 16, 2016 4:03 PM
To: Taylor, Andrew
Subject: FW: Stantec FTP Confirmation - ADELAIDE 2015 ANNUAL POST-CON REPORT

Hi Anderw,
I still don't see the report on the site. There are just 5 jpegs from April.
Emma
Emma Valliant
A/Regional Planning Ecologist
705-755-5393

From: Beal, Jim (MNRF)
Sent: May 16, 2016 9:07 AM
To: Valliant, Emma (MNRF)
Subject: FW: Stantec FTP Confirmation - ADELAIDE 2015 ANNUAL POST-CON REPORT

From: Taylor, Andrew [mailto:andrew.taylor@stantec.com]
Sent: May-16-16 9:05 AM
To: Beal, Jim (MNRF)
Subject: FW: Stantec FTP Confirmation - ADELAIDE 2015 ANNUAL POST-CON REPORT

Hi Jim,
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Adelaide Wind Power Project:

Addendum to the Raptor Monitoring Plan

Prepared for:
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File No. 160961067
February 17, 2017

Sign-off Sheet

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Table of Contents

Abbreviations

EEMP	Environmental Effects Monitoring Plan
MNRF	Ministry of Natural Resources and Forestry
MW	Megawatt
RMP	Raptor Monitoring Plan

1.0 INTRODUCTION

Suncor Adelaide Wind Limited Partnership (Suncor) is operating the 18 turbine Adelaide Wind Power Project (Adelaide) north of Strathroy, Ontario, in Middlesex County, Municipality of Adelaide Metcalfe. The Project is located north of Strathroy, Ontario. 2015 was the first year of operation and post-construction monitoring at the Adelaide facility.

A Raptor Management Plan (RMP) was created in response to the exceedance (0.46 raptors/turbine/year) of the provincial threshold for raptors (0.2 raptors/turbine/year) in 2015. The purpose of the RMP is to provide additional information on raptor mortality and habitat use at the Adelaide facility to inform and assist in establishing proposed mitigation measures. The results of the 2015 mortality monitoring program (e.g., species and survey timing) were used to guide the development of the RMP. The RMP focused on the breeding season (May, June and July), as all five raptor fatalities in 2015 occurred in June. The RMP program was approved by the Ministry of Natural Resources and Forestry (MNRF) in June 2016.

The first year of the RMP was implemented in 2016 and included the following monitoring components:

- scoped mortality monitoring during the breeding season (bi-monthly in May, weekly in June and July)
- cause and effect monitoring, comprised of:
    - background records review
    - habitat mapping
    - behaviour surveys at active nests (weekly, May-July)
    - adaptive monitoring

During the second year of monitoring in 2016 as part of the Environmental Effects Monitoring Plan (EEMP), two Turkey Vultures and two Red-tailed Hawk fatalities were recovered. Correcting for percent area searched, these 4 fatalities resulted in a mortality rate of 0.80 raptors/turbine/year. Unlike the 2015 raptor mortality which was concentrated in June, most raptor mortality in 2016 occurred in the fall with three raptors in September and one in October, as well as a single raptor in May.

ADELAIDE WIND POWER PROJECT:

ADDENDUM TO THE RAPTOR MONITORING PLAN

Introduction
February 17, 2017

The raptor mortality rate recorded in 2016 of 0.80 raptors/turbine/year was above the provincial threshold of 0.2 raptors/turbine/year (MNR 2011). As such, in accordance with the EEMP and the REA (Section I10), an appropriate response plan must be prepared and implemented that includes some or all of the following measures:

- Increased reporting frequency to identify potential threshold exceedance.
- Additional behavioural studies to determine factors affecting mortality rates.
- Periodic shut-down of select turbines.
- Blade feathering at specific times of year.
- An alternative plan agreed to between the Company and MNRF.

This Addendum is intended to be implemented concurrently with the RMP and therefore provides the supplementary methods and reporting protocols for additional monitoring and reporting beyond those detailed in the RMP.

The implementation of this Plan in conjunction with the RMP is intended to fulfill the REA requirements of mitigation implementation due to raptor threshold exceedance in 2015 and 2016.

2.0 METHODS

This plan proposes additional behavior studies, an extended scoped mortality program and increased reporting frequency in response to the second year of raptor threshold exceedance observed at the Adelaide Wind Power Project.

Based on the results of the 2016 habitat mapping and mortality surveys, Osprey is considered at low risk of turbine collision at the Adelaide facility, and as such no additional monitoring for this species is proposed. Turkey Vulture and Red-tailed Hawk ("the Species") will comprise those targeted in the 2017 program. Survey methods are described below.

2.1 SCOPED MORTALITY MONITORING

In addition to the EEMP and RMP monitoring, scoped mortality monitoring for raptors will be extended to weekly surveys at all non-subset turbines during both the breeding and fall migration seasons (May-October). Monitoring will consist of searches within 50 m of all non-subset turbines by walking in concentric circles weekly from May to October, encompassing the timing of raptor mortalities over the past two years.

2.2 CAUSE AND EFFECT MONITORING

The 2016 RMP cause and effect monitoring will be replicated in 2017, except for the background records review which has already been completed. Habitat mapping will be completed to locate active nests within one kilometer of turbines in the project, following the protocols outlined in Section 3.2.2 of the RMP. These field surveys will assess the activity of known nests in 2017, as well as re-assess the remainder of the study area to look for new nests.

Behavioral surveys will then be undertaken at each nest location, following the protocols outlined in 3.2.3 of the RMP. However, whereas the 2016 RMP focused on the breeding season, this addendum proposes to extend the weekly monitoring through the fall migration season, in August, September and October.

2.3 NOTIFICATION PROTOCOL

In response to the exceedance of the raptor threshold in 2016, increased reporting frequency will be implemented in 2017. The purpose of the frequent reporting is to identify potential threshold exceedances as they occur.

MNRF, Renewable Energy Branch, will be notified via email within 48 hours of the discovery of any raptor mortality. Furthermore, within 5 business days of the end of each month (i.e. May through October), MNRF will be provided with the corrected raptor mortality rate for that month. This increased level of reporting will provide immediate feedback, highlight potential risk factors and provide earlier notification of threshold exceedance and allow for quicker contingency actions if required.

3.0 REPORTING AND ANALYSIS

Reporting for the scoped raptor mortality and cause and effect monitoring programs will occur annually in conjunction with the EEMP post-construction monitoring report.

The 2017 report will synthesize the two years' of data and compare inter-annual variation in habitat availability, nest locations, and mortality patterns. The analysis in this report will be used to inform recommendations on measures to mitigate any documented risk to raptors within the Adelaide Wind Power Project.

4.0 SUMMARY

In response to the raptor threshold exceedance in 2015, two years of subsequent scoped mortality and cause and effect monitoring for raptors is required (2016-2017), which is outlined in the RMP. In response to the raptor threshold exceedance in 2016, additional monitoring and reporting will be implemented in 2017, in addition to the commitments in the RMP. Additional measures are:

- Increasing scoped mortality monitoring, extending the weekly monitoring at all non-subset turbine to include both the breeding and fall migration seasons (weekly, May through October).
- Increased behavioural monitoring, extended with twice weekly monitoring in August, September, and October.
- Development of a response protocol to provide MNRF with frequent reports of raptor mortality.

In accordance with REA Section I8, further mitigation measures will be developed following the second year (2017) of cause and effect monitoring.

The implementation of both supplemental raptor monitoring plans (RMP and this Addendum to the RMP) in 2017 is intended to fulfill the requirements of the REA in response to raptor threshold exceedances in 2015 and 2016.

5.0 REFERENCES

Cadman, M. D., D.A. Sutherland, G.G. Beck, D. Lepage, A.R. Couturier. 2007. Atlas of the Breeding Birds of Ontario, 2001-2005. (eds) Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of natural resources, and Ontario Nature, Toronto, xxii + 318pp.

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APPENDIX E
TABLES

Table 2.1: Categories of Carcass Condition

Code	Category	Description
I	Injured	Individual still alive.
F	Fresh	Freshly dead with little or no decay or scavenging by insects; estimated 1 to 2 days.
E	Early decomposition	Recently dead but with early signs of decay or scavenging by insects; estimated 3 to 5 days.
M	Moderate decomposition	Noticeable signs of decay or scavenging by insects; estimated 6 to 7 days.
A	Advanced decomposition	Decomposed carcass, barely recognizable or not recognizable to species; estimated more than 7 days.
C	Complete decomposition	Residual remains, such as feathers, bones, other scraps of tissue.
S	Scavenged	Carcass is not intact.

Table 2.2: Categories of Visibility Class

Class	% Vegetation Cover	Vegetation Height
Class 1 (Easy)	≥ 90% bare ground	≤ 15cm tall
Class 2 (Moderate)	≥ 25% bare ground	≤ 15 cm tall
Class 3 (Difficult)	≤ 25% bare ground	≤ 25% > 30cm tall
Class 4 (Very difficult)	Little to no bare ground	≥ 25% > 30cm tall

Table 2.3: Adelaide Wind Energy Cause and Effect Monitoring Field Survey Record, 2016

Survey Date	Survey Type	Personnel	Time	Weather Conditions*
April 15, 2016	Habitat Mapping	M. Straus	10:15-16:00	10-18^{0}C, 1-3 wind, 0% cloud cover, no precipitation, no precipitation in the last 24hrs
May 12, 2016	Raptor Behavioural Monitoring	M. Straus	20:00-21:15	20^{0}C, 3 wind, 0% cloud cover, no precipitation, no precipitation in the last 24hrs
June 6, 2016	Raptor Behavioural Monitoring	A. Corrigan	11:30-13:30	23-24^{0}C, 5 wind, 3-60% cloud cover, no precipitation, thunderstorms in the last 24hrs
June 15, 2016	Habitat Mapping	M. Straus	13:00-17:00	20^{0}C, 2 wind, 100% cloud cover, precipitation, no precipitation in the last 24hrs
June 15, 2016	Raptor Behavioural Monitoring	M. Straus	11:00-13:00	20^{0}C, 2 wind, 100% cloud cover, precipitation, no precipitation in the last 24hrs
June 20, 2016	Raptor Behavioural Monitoring	B. Obermayer	9:15 -11:15	18-26^{0}C, 2-4 wind, 50-100% cloud cover, no precipitation, no precipitation in the last 24hrs
June 27, 2016	Raptor Behavioural Monitoring	B. Obermayer	9:58 -11:58	28-31^{0}C, 1-3 wind, 5-10% cloud cover, no precipitation, precipitation in the last 24hrs
July 4, 2016	Raptor Behavioural Monitoring	B. Obermayer	8:40 -10:40	18-24^{0}C, 1-4 wind, 0-5% cloud cover, no precipitation, no precipitation in the last 24hrs
July 11, 2016	Raptor Behavioural Monitoring	A. Corrigan	8:53 -10:53	19-25^{0}C, 1-2 wind, 40-70% cloud cover, no precipitation, no precipitation in the last 24hrs
July 21, 2016	Raptor Behavioural Monitoring	A. Corrigan	7:51 - 9:51	19-25^{0}C, 2-3 wind, 10% cloud cover, no precipitation, no precipitation in the last 24hrs
July 29, 2016	Raptor Behavioural Monitoring	M. Straus	8:05 -10:05	20-25^{0}C, 1 wind, 50% cloud cover, no precipitation, no precipitation in the last 24hrs

* Wind conditions expressed using Beaufort Scale:

0 – calm, <2km/hr 2 – light, 7-12 km/hr 4 – moderate, 20-30 km/hr 6 – strong, 41-51 km/hr

1 – light, 2-6 km/hr 3 – moderate, 13-19 km/hr 5 – fresh, 31-40 km/hr

Table 3.1: Searcher Efficiency Trials at the Adelaide Wind Energy Project, 2016

Month	Searcher	Placed	Scavenged	Found	Individual SE (Se_x)
Spring	NC	30	9	13	0.62
Summer	NC	23	3	16	0.80
Fall	DD	21	0	9	0.43

NC- Nash Colville
DD- Dan Dilario

Table 3.2: Scavenger Trials at the Adelaide Wind Energy Project, 2016

	Placed	Visit 1	Visit 2	Visit 3	Visit 4	Sc as a proportion
Spring						
# of Carcasses	20	19	17	13	6	0.79
Summer						
# of Carcasses	20	20	17	11	9	0.84
Fall						
# of Carcasses	20	15	12	8	7	0.76

Table 3.3: Average Monthly Percent Area Searched (Ps) at the Adelaide Wind Energy Project, 2016

Month	Turbine	Vegetation/Crop	Ps (%)	Average Ps (%)
May	6	Soy	0.89	0.97
	7	Soy	1.00	
	11	Soy	0.97	
	12	Soy	0.97	
	14	Corn	0.91	
	17	Corn	0.95	
	19	Corn	0.99	
	20	Agriculture	0.99	
	22	Soy	1.00	
	27	Agriculture	1.00	
June	6	Soy	0.49	0.80
	7	Soy	1.00	
	11	Soy	0.71	
	12	Soy	0.44	
	14	Corn	0.78	
	17	Corn	0.84	
	19	Corn	1.00	
	20	Agriculture	0.76	
	22	Soy	1.00	
	27	Agriculture	1.00	
July	6	Soy	0.54	0.83
	7	Soy	1.00	
	11	Soy	0.92	
	12	Soy	0.73	
	14	Corn	0.49	
	17	Corn	0.87	
	19	Corn	0.85	
	20	Agriculture	1.00	
	22	Soy	1.00	
	27	Agriculture	1.00	

Table 3.3: Average Monthly Percent Area Searched (Ps) at the Adelaide Wind Energy Project, 2016

Month	Turbine	Vegetation/Crop	Ps (%)	Average Ps (%)
August	6	Soy	0.78	0.70
	7	Soy	0.79	
	11	Soy	0.94	
	12	Soy	0.88	
	14	Corn	0.40	
	17	Corn	0.72	
	19	Corn	0.51	
	20	Agriculture	0.74	
	22	Soy	0.64	
	27	Agriculture	0.67	
September	6	Soy	0.43	0.43
	7	Soy	0.16	
	11	Soy	0.94	
	12	Soy	0.85	
	14	Corn	0.15	
	17	Corn	0.42	
	19	Corn	0.19	
	20	Agriculture	0.94	
	22	Soy	0.17	
	27	Agriculture	0.21	
October	6	Soy	0.17	0.58
	7	Soy	0.51	
	11	Soy	0.96	
	12	Soy	0.90	
	14	Corn	0.33	
	17	Corn	0.45	
	19	Corn	0.21	
	20	Agriculture	0.96	
	22	Soy	0.69	
	27	Agriculture	0.76	
Average % Searched				**0.72**

Table 3.4: Uncorrected Monthly Raptor Fatalities, at the Adelaide Wind Energy Project, 2016

Month	Species	Number of individuals	Turbine	Total per month
May	Red-tailed Hawk	1	12	1
June	-	-	-	0
July	-	-	-	0
August	-	-	-	0
September	Turkey Vulture	1	20	3
	Red-tailed Hawk	1	11	
	Turkey Vulture	1	22	
October	-	-	-	0
Total				**4**

Table 3.5: Corrected Monthly Raptor Mortality Estimates at the Adelaide Wind Energy Project, 2016

Month	c	SE	SC	PS	C	C per MW	C per Turbine
May	1	1.00	1.00	0.97	1.03	0.05	0.10
June	0	1.00	1.00	0.80	0.00	0.00	0.00
July	0	1.00	1.00	0.83	0.00	0.00	0.00
August	0	1.00	1.00	0.70	0.00	0.00	0.00
September	3	1.00	1.00	0.43	6.98	0.32	0.70
October	0	1.00	1.00	0.58	0.00	0.00	0.00
TOTAL	**4**				**8.01**	**0.37**	**0.80**

c	Number of small bird carcasses located (uncorrected)
Se	Searcher Efficiency Trial Results
Sc	Scavenger Trial Results
Ps	Percent Area Surveyed
C	Corrected Mortality Estimate
Per Turbine	C Divided by Total Number of Turbines
Per MW	C Divided by Total Number of MegaWatts

Table 3.6: Supplemental Monitoring and Incidental Fatalities at the Adelaide Wind Energy Project, 2015

Date	Species	Turbine	Recovery/Survey Type
5/12/2016	Bobolink	17	Incidentally by Stantec staff
7/27/2016	Hoary Bat	8	Monthly raptor monitoring program
7/29/2016	Hoary Bat	18	Incidentally by maintenance staff
9/28/2016	Silver-haired Bat	21	Monthly raptor monitoring program

Table 3.7: Uncorrected Monthly Small Bird Fatalities at the Adelaide Wind Energy Project, 2016

Month	Species	Number of individuals	Turbine	Total per month
May	None	0	n/a	0
June	None	0	n/a	0
July	European Starling	1	20	1
August	None	0	n/a	0
September	None	0	n/a	0
October	None	0	n/a	0
Total				**1**

Table 3.8: Small Bird Fatalities per Turbine at the Adelaide Wind Energy Project, 2015

Turbine	May		June		July		August		September		October		Total	
	c	C	c	C	c	C	c	C	c	C	c	C	c	C
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	1.00	1.93	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.93
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

c Number of small bird carcasses located (uncorrected)

C Corrected Mortality Estimate

Table 3.9: Corrected Monthly Small Bird Mortality Estimates at the Adelaide Wind Energy Project, 2016

Month	c	SE	SC	PS	C	C per MW	C per Turbine
May	0	0.62	0.79	0.97	0.00	0.00	0.00
June	0	0.62	0.79	0.80	0.00	0.00	0.00
July	1	0.80	0.84	0.83	1.79	0.09	0.19
August	0	0.80	0.84	0.70	0.00	0.00	0.00
September	0	0.43	0.76	0.43	0.00	0.00	0.00
October	0	0.43	0.76	0.58	0.00	0.00	0.00
TOTAL	**1**				**1.79**	**0.08**	**0.18**

c	Number of small bird carcasses located (uncorrected)
Se	Searcher Efficiency Trial Results
Sc	Scavenger Trial Results
Ps	Percent Area Surveyed
C	Corrected Mortality Estimate
Per Turbine	C Divided by Total Number of Turbines
Per MW	C Divided by Total Number of MegaWatts

Table 3.10: Uncorrected Monthly Bat Fatalities at the Adelaide Wind Energy Project, 2016

Month	Species	Number of Individuals	Turbine
May	Silver-haired Bat	1	7
June	Silver-haired Bat	1	11
July	Big Brown Bat	1	11
	Hoary Bat	1	20
August	Hoary Bat	1	14
	Red Bat	1	22
September	Silver-haired Bat	1	12
October	Hoary Bat	1	22
	Silver-haired Bat	3	11[1], 20
TOTAL		**11**	

[1] Two fatalities occurred at this turbine within the given period.

Table 3.11: Uncorrected Bat Fatalities by Turbine at the Adelaide Wind Energy Project, 2016

Turbine	Number of Individuals
6	0
7	1
11	4
12	1
14	1
17	0
19	0
20	2
22	2
27	0

Table 3.12: Corrected Bat Mortality Estimates at the Adelaide Wind Energy Project, 2016

Month	c	SE	SC	PS	C	C per MW	C per Turbine
May	1	0.62	0.79	0.97	2.10	0.09	0.21
June	1	0.62	0.79	0.80	2.55	0.11	0.26
July	2	0.80	0.84	0.83	3.57	0.17	0.38
August	2	0.80	0.84	0.70	4.25	0.19	0.43
September	1	0.43	0.76	0.43	7.12	0.32	0.71
October	4	0.43	0.76	0.58	21.10	0.95	2.11
TOTAL	**11**				**40.71**	**1.85**	**4.08**

c	Number of bat carcasses located (uncorrected)
Se	Searcher Efficiency Trial Results
Sc	Scavenger Impact Trial Results
Ps	Percent Area Surveyed
C	Corrected Mortality Estimate
Per Turbine	C Divided by Total Number of Turbines
Per MW	C Divided by Total Number of MegaWatts

Table 3.13: Adelaide Wind Energy Incidental Raptor Habitat Mapping Results, 2016

Survey Date	Species	Number Observed	Behaviour
April 15, 2016	Red-tailed Hawk	3	• thermal soaring (hunting/scavenging) • perching
	Turkey Vulture	24	• perching • hunting
June 15, 2016	Red-tailed Hawk	1	• hunting • perching
	Turkey Vulture	9	• gliding

Table 3.14: Adelaide Wind Energy Behavioural Survey Results, 2016

Date (2016)	Adults		
	#	Behaviour	Flight Height (m)
May 12	1	Adult was on the nest for the survey duration.	20
June 6	1	Adult glided west out of sight, then later soared over forest feature before it went into the woodlot towards the nest location. Nest no longer visible due to leaves. Later, the adult glided east and south out of view, then came back into view when soaring over nest area. Finally, it flew in the north direction out of view.	40-75
June 15	0	No birds visible.	
June 20	1	Adult thermal soared over eastern portion of woodlot and parts of agriculture before flying south out of view. Next, it soared again over woodlot and surrounding agriculture, disappeared, then was observed briefly gliding over tree line sometime after. Finally, the adult soared over the woodlot and agriculture and disappeared in the south direction.	30-60
June 27	0	-	-
July 4	1	Adult soared over woodlot and agriculture until out view.	30
July 11	0	-	-
July 21	0	-	-
July 29	3	Two Turkey Vultures were incidentally observed during survey soaring in circles above agriculture and the woodlot that contained the nest. One additional Turkey Vulture joined in soaring over this woodlot.	50-90

Table 4.1: Corrected Bird, Raptor and Bat Fatalities at the Adelaide Wind Power Project, 2015-2016

	Raw Fatalities per year[1]		Mortality per turbine per year	
Guild	**2015**	**2016**	**2015**	**2016**
Raptors	4	4	0.46	0.80
Birds	10	1	2.32	0.18
Bats	36	11	8.57	4.08

1- Does not include incidental fatalities recovered outside the regular mortality search program

APPENDIX F:
RAW MORTALITY DATA

Stantec

Appendix F1: Weekly Mortality Monitoring Survey Record

project_name	turbine_number	treatment_group	day	month	year	start_time	end_time	duration_min	number_of_searchers	searchers_names	days_since_last_search	actual_area_searched_m2
Adelaide Wind Farm	6	Subset	2	5	2016	10:30	11:00	30	1	Nash Colville	First search of the year	7854
Adelaide Wind Farm	7	Subset	2	5	2016	11:00	11:30	30	1	Nash Colville	First search of the year	7854
Adelaide Wind Farm	11	Subset	2	5	2016	11:35	12:05	30	1	Nash Colville	First search of the year	7854
Adelaide Wind Farm	12	Subset	2	5	2016	12:10	12:40	30	1	Nash Colville	First search of the year	7854
Adelaide Wind Farm	14	Subset	2	5	2016	12:40	13:10	30	1	Nash Colville	First search of the year	7854
Adelaide Wind Farm	17	Subset	2	5	2016	13:15	13:45	30	1	Nash Colville	First search of the year	7293
Adelaide Wind Farm	19	Subset	2	5	2016	13:50	14:20	30	1	Nash Colville	First search of the year	7649
Adelaide Wind Farm	20	Subset	2	5	2016	14:25	14:55	30	1	Nash Colville	First search of the year	7854
Adelaide Wind Farm	22	Subset	2	5	2016	15:00	15:30	30	1	Nash Colville	First search of the year	7854
Adelaide Wind Farm	27	Subset	2	5	2016	15:35	16:05	30	1	Nash Colville	First search of the year	7854
Adelaide Wind Farm	6	Subset	5	5	2016	10:05	10:35	30	1	Nash Colville	3	7854
Adelaide Wind Farm	7	Subset	5	5	2016	10:40	11:10	30	1	Nash Colville	3	7854
Adelaide Wind Farm	11	Subset	5	5	2016	11:15	11:45	30	1	Nash Colville	3	7854
Adelaide Wind Farm	12	Subset	5	5	2016	11:50	12:20	30	1	Nash Colville	3	7854
Adelaide Wind Farm	14	Subset	5	5	2016	12:25	12:55	30	1	Nash Colville	3	7854
Adelaide Wind Farm	17	Subset	5	5	2016	13:00	13:30	30	1	Nash Colville	3	7293
Adelaide Wind Farm	19	Subset	5	5	2016	13:35	14:05	30	1	Nash Colville	3	7649
Adelaide Wind Farm	20	Subset	5	5	2016	14:10	14:45	35	1	Nash Colville	3	7854
Adelaide Wind Farm	22	Subset	5	5	2016	14:45	15:15	30	1	Nash Colville	3	7854
Adelaide Wind Farm	27	Subset	5	5	2016	15:20	15:50	30	1	Nash Colville	3	7854
Adelaide Wind Farm	6	Subset	9	5	2016	10:05	10:35	30	1	Nash Colville	4	7854
Adelaide Wind Farm	7	Subset	9	5	2016	10:40	11:20	40	1	Nash Colville	4	7854
Adelaide Wind Farm	11	Subset	9	5	2016	11:25	11:55	30	1	Nash Colville	4	7854
Adelaide Wind Farm	12	Subset	9	5	2016	12:00	12:30	30	1	Nash Colville	4	7854
Adelaide Wind Farm	14	Subset	9	5	2016	12:30	13:00	30	1	Nash Colville	4	7854
Adelaide Wind Farm	17	Subset	9	5	2016	13:55	14:30	35	1	Nash Colville	4	7629
Adelaide Wind Farm	19	Subset	9	5	2016	14:35	15:05	30	1	Nash Colville	4	7771
Adelaide Wind Farm	20	Subset	9	5	2016	15:10	15:40	30	1	Nash Colville	4	7854
Adelaide Wind Farm	22	Subset	9	5	2016	15:40	16:20	40	1	Nash Colville	4	7854
Adelaide Wind Farm	27	Subset	9	5	2016	16:25	17:00	35	1	Nash Colville	4	7854
Adelaide Wind Farm	6	Subset	12	5	2016	10:40	11:20	40	1	Nash Colville	3	7854
Adelaide Wind Farm	11	Subset	12	5	2016	11:30	12:00	30	1	Nash Colville	3	7854
Adelaide Wind Farm	12	Subset	12	5	2016	12:10	12:45	35	1	Nash Colville	3	7854
Adelaide Wind Farm	14	Subset	12	5	2016	12:50	13:20	30	1	Nash Colville	3	7854
Adelaide Wind Farm	17	Subset	12	5	2016	13:30	14:00	30	1	Nash Colville	3	7702
Adelaide Wind Farm	19	Subset	12	5	2016	14:10	14:40	30	1	Nash Colville	3	7854
Adelaide Wind Farm	20	Subset	12	5	2016	14:50	15:20	30	1	Nash Colville	3	7854
Adelaide Wind Farm	22	Subset	12	5	2016	15:30	16:05	35	1	Nash Colville	3	7854
Adelaide Wind Farm	27	Subset	12	5	2016	16:15	16:45	30	1	Nash Colville	3	7854
Adelaide Wind Farm	7	Subset	12	5	2016	16:50	17:20	30	1	Nash Colville	3	7854
Adelaide Wind Farm	6	Subset	16	5	2016	10:35	11:05	30	1	Nash Colville	4	7854
Adelaide Wind Farm	7	Subset	16	5	2016	11:10	11:50	40	1	Nash Colville	4	7854
Adelaide Wind Farm	11	Subset	16	5	2016	11:55	12:25	30	1	Nash Colville	4	7854
Adelaide Wind Farm	12	Subset	16	5	2016	12:30	13:00	30	1	Nash Colville	4	7854
Adelaide Wind Farm	14	Subset	16	5	2016	13:05	13:35	30	1	Nash Colville	4	7854
Adelaide Wind Farm	17	Subset	16	5	2016	13:40	14:10	30	1	Nash Colville	4	7854
Adelaide Wind Farm	19	Subset	16	5	2016	14:55	15:25	30	1	Nash Colville	4	7750
Adelaide Wind Farm	20	Subset	16	5	2016	15:00	15:30	30	1	Nash Colville	4	7854
Adelaide Wind Farm	22	Subset	16	5	2016	15:35	16:05	30	1	Nash Colville	4	7854
Adelaide Wind Farm	27	Subset	16	5	2016	16:15	16:55	40	1	Nash Colville	4	7854
Adelaide Wind Farm	6	Subset	19	5	2016	10:00	10:30	30	1	Nash Colville	3	7854
Adelaide Wind Farm	7	Subset	19	5	2016	10:30	11:00	30	1	Nash Colville	3	7854
Adelaide Wind Farm	11	Subset	19	5	2016	11:05	11:35	30	1	Nash Colville	3	7854
Adelaide Wind Farm	12	Subset	19	5	2016	11:40	12:10	30	1	Nash Colville	3	7854
Adelaide Wind Farm	14	Subset	19	5	2016	12:10	12:40	30	1	Nash Colville	3	7854
Adelaide Wind Farm	17	Subset	19	5	2016	12:45	13:15	30	1	Nash Colville	3	7854

Appendix F1: Weekly Mortality Monitoring Survey Record

project_name	turbine_number	dog_used	search_area_shape	search_area_dimension	transect_separation_m	temp_celsius	wind_speed	wind_direction	precipitation	cloud_cover_percent	signif_weather	comments
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	12	9	NE	Rain	Partly Cloudy	Heavy Rain	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	12	9	NE	Rain	Partly Cloudy	Heavy Rain	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	12	9	NE	Rain	Partly Cloudy	Heavy Rain	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	12	9	NE	Rain	Partly Cloudy	Heavy Rain	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	12	9	NE	Rain	Partly Cloudy	Heavy Rain	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	12	9	NE	Rain	Partly Cloudy	Heavy Rain	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	12	9	NE	Rain	Partly Cloudy	Heavy Rain	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	12	9	NE	Rain	Partly Cloudy	Heavy Rain	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	12	9	NE	Rain	Partly Cloudy	Heavy Rain	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	12	9	NE	Rain	Partly Cloudy	Heavy Rain	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	16	22	SE	None	Partly Cloudy	None	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	16	22	SE	None	Partly Cloudy	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	16	22	SE	None	Partly Cloudy	None	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	16	22	SE	None	Partly Cloudy	None	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	16	22	SE	None	Partly Cloudy	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	16	22	SE	None	Partly Cloudy	None	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	16	22	SE	None	Partly Cloudy	None	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	16	22	SE	None	Partly Cloudy	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	16	22	SE	None	Partly Cloudy	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	16	22	SE	None	Partly Cloudy	None	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	14	17	SE	Light Rain	Overcast	Light Rain	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	14	17	SE	Light Rain	Overcast	Light Rain	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	14	17	SE	Light Rain	Overcast	Light Rain	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	14	17	SE	Light Rain	Overcast	Light Rain	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	14	17	SE	Light Rain	Overcast	Light Rain	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	14	17	SE	Light Rain	Overcast	Light Rain	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	14	17	SE	Light Rain	Overcast	Light Rain	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	14	17	SE	Light Rain	Overcast	Light Rain	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	14	17	SE	Light Rain	Overcast	Light Rain	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	14	17	SE	Light Rain	Overcast	Light Rain	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	16	20	NE	Light Rain	Partly Cloudy	Light Rain	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	16	20	NE	Light Rain	Partly Cloudy	Light Rain	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	16	20	NE	Light Rain	Partly Cloudy	Light Rain	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	16	20	NE	Light Rain	Partly Cloudy	Light Rain	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	16	20	NE	Light Rain	Partly Cloudy	Light Rain	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	16	20	NE	Light Rain	Partly Cloudy	Light Rain	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	16	20	NE	Light Rain	Partly Cloudy	Light Rain	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	16	20	NE	Light Rain	Partly Cloudy	Light Rain	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	16	20	NE	Light Rain	Partly Cloudy	Light Rain	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	16	20	NE	Light Rain	Partly Cloudy	Light Rain	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	18	27	SW	Drizzle	Partly Cloudy	Drizzle	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	18	27	SW	Drizzle	Partly Cloudy	Drizzle	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	18	27	SW	Drizzle	Partly Cloudy	Drizzle	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	18	27	SW	Drizzle	Partly Cloudy	Drizzle	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	18	27	SW	Drizzle	Partly Cloudy	Drizzle	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	18	27	SW	Drizzle	Partly Cloudy	Drizzle	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	18	27	SW	Drizzle	Partly Cloudy	Drizzle	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	18	27	SW	Drizzle	Partly Cloudy	Drizzle	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	18	27	SW	Drizzle	Partly Cloudy	Drizzle	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	18	27	SW	Drizzle	Partly Cloudy	Drizzle	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	19	9	NW	None	Fair	None	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	19	9	NW	None	Fair	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	19	9	NW	None	Fair	None	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	19	9	NW	None	Fair	None	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	19	9	NW	None	Fair	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	19	9	NW	None	Fair	None	

Appendix F1: Weekly Mortality Monitoring Survey Record

project_name	turbine_number	treatment_group	day	month	year	start_time	end_time	duration_min	number_of_searchers	searchers_names	days_since_last_search	actual_area_searched_m2
Adelaide Wind Farm	19	Subset	19	5	2016	13:20	13:50	30	1	Nash Colville	3	7632
Adelaide Wind Farm	20	Subset	19	5	2016	13:55	14:25	30	1	Nash Colville	3	7854
Adelaide Wind Farm	27	Subset	19	5	2016	14:30	15:05	35	1	Nash Colville	3	7854
Adelaide Wind Farm	22	Subset	19	5	2016	15:10	15:45	35	1	Nash Colville	3	7854
Adelaide Wind Farm	6	Subset	24	5	2016	10:40	11:10	30	1	Nash Colville	5	5824
Adelaide Wind Farm	7	Subset	24	5	2016	11:15	11:45	30	1	Nash Colville	5	7854
Adelaide Wind Farm	11	Subset	24	5	2016	11:45	12:15	30	1	Nash Colville	5	7854
Adelaide Wind Farm	12	Subset	24	5	2016	12:15	12:45	30	1	Nash Colville	5	7350
Adelaide Wind Farm	17	Subset	24	5	2016	12:50	13:20	30	1	Nash Colville	5	7125
Adelaide Wind Farm	19	Subset	24	5	2016	13:20	13:50	30	1	Nash Colville	5	7854
Adelaide Wind Farm	20	Subset	24	5	2016	13:55	14:25	30	1	Nash Colville	5	7854
Adelaide Wind Farm	22	Subset	24	5	2016	14:25	14:55	30	1	Nash Colville	5	7854
Adelaide Wind Farm	27	Subset	24	5	2016	15:00	15:35	35	1	Nash Colville	5	7854
Adelaide Wind Farm	6	Subset	26	5	2016	10:30	11:00	30	1	Nash Colville	2	5253
Adelaide Wind Farm	7	Subset	26	5	2016	11:00	11:30	30	1	Nash Colville	2	7854
Adelaide Wind Farm	11	Subset	26	5	2016	11:35	12:05	30	1	Nash Colville	2	6720
Adelaide Wind Farm	12	Subset	26	5	2016	12:10	12:40	30	1	Nash Colville	2	7255
Adelaide Wind Farm	14	Subset	26	5	2016	12:45	13:15	30	1	Nash Colville	7	5000
Adelaide Wind Farm	19	Subset	26	5	2016	13:20	13:50	30	1	Nash Colville	2	7854
Adelaide Wind Farm	20	Subset	26	5	2016	13:55	14:25	30	1	Nash Colville	2	7475
Adelaide Wind Farm	22	Subset	26	5	2016	14:25	15:00	35	1	Nash Colville	2	7854
Adelaide Wind Farm	22	Subset	26	5	2016	15:05	15:40	35	1	Nash Colville	2	7854
Adelaide Wind Farm	17	Subset	26	5	2016	15:45	16:20	35	1	Nash Colville	2	7167
Adelaide Wind Farm	6	Subset	30	5	2016	10:45	11:10	25	1	Nash Colville	4	5000
Adelaide Wind Farm	7	Subset	30	5	2016	11:15	11:45	30	1	Nash Colville	4	7854
Adelaide Wind Farm	11	Subset	30	5	2016	11:50	12:20	30	1	Nash Colville	4	6750
Adelaide Wind Farm	12	Subset	30	5	2016	12:20	12:50	30	1	Nash Colville	4	7000
Adelaide Wind Farm	14	Subset	30	5	2016	12:50	13:20	30	1	Nash Colville	4	5000
Adelaide Wind Farm	17	Subset	30	5	2016	13:25	13:55	30	1	Nash Colville	4	7000
Adelaide Wind Farm	19	Subset	30	5	2016	14:00	14:30	30	1	Nash Colville	4	7854
Adelaide Wind Farm	20	Subset	30	5	2016	14:35	15:05	30	1	Nash Colville	4	7854
Adelaide Wind Farm	22	Subset	30	5	2016	15:05	15:35	30	1	Nash Colville	4	7854
Adelaide Wind Farm	27	Subset	30	5	2016	15:40	16:15	35	1	Nash Colville	4	7854
Adelaide Wind Farm	7	Subset	2	6	2016	10:15	10:45	30	1	Nash Colville	3	7845
Adelaide Wind Farm	11	Subset	2	6	2016	10:50	11:20	30	1	Nash Colville	3	6598
Adelaide Wind Farm	14	Subset	2	6	2016	11:25	11:55	30	1	Nash Colville	3	5250
Adelaide Wind Farm	17	Subset	2	6	2016	12:00	12:30	30	1	Nash Colville	3	7015
Adelaide Wind Farm	19	Subset	2	6	2016	12:35	13:10	35	1	Nash Colville	3	7854
Adelaide Wind Farm	20	Subset	2	6	2016	13:15	13:45	30	1	Nash Colville	3	7381
Adelaide Wind Farm	22	Subset	2	6	2016	14:45	15:15	30	1	Nash Colville	3	7854
Adelaide Wind Farm	27	Subset	2	6	2016	15:20	16:00	40	1	Nash Colville	3	7854
Adelaide Wind Farm	6	Subset	6	6	2016	9:50	10:20	30	1	Nash Colville	7	4000
Adelaide Wind Farm	7	Subset	6	6	2016	10:25	10:55	30	1	Nash Colville	4	7854
Adelaide Wind Farm	11	Subset	6	6	2016	11:00	11:30	30	1	Nash Colville	4	4500
Adelaide Wind Farm	14	Subset	6	6	2016	11:35	12:05	30	1	Nash Colville	4	7854
Adelaide Wind Farm	17	Subset	6	6	2016	12:10	12:40	30	1	Nash Colville	4	6500
Adelaide Wind Farm	20	Subset	6	6	2016	12:45	13:15	30	1	Nash Colville	4	4500
Adelaide Wind Farm	22	Subset	6	6	2016	13:15	13:45	30	1	Nash Colville	4	7854
Adelaide Wind Farm	27	Subset	6	6	2016	13:50	14:20	30	1	Nash Colville	4	7854
Adelaide Wind Farm	12	Subset	6	6	2016	14:25	14:50	25	1	Nash Colville	7	3000
Adelaide Wind Farm	6	Subset	9	6	2016	10:40	11:05	25	1	Nash Colville	3	4000
Adelaide Wind Farm	7	Subset	9	6	2016	11:10	11:40	30	1	Nash Colville	3	7854
Adelaide Wind Farm	11	Subset	9	6	2016	11:45	12:15	30	1	Nash Colville	3	4500
Adelaide Wind Farm	12	Subset	9	6	2016	12:15	12:40	25	1	Nash Colville	3	3000
Adelaide Wind Farm	17	Subset	9	6	2016	12:45	13:15	30	1	Nash Colville	3	6500
Adelaide Wind Farm	19	Subset	9	6	2016	13:15	13:45	30	1	Nash Colville	7	7854

Appendix F1: Weekly Mortality Monitoring Survey Record

project_name	turbine_number	dog_used	search_area_shape	search_area_dimension	transect_separation_m	temp_celsius	wind_speed	wind_direction	precipitation	cloud_cover_percent	signif_weather	comments
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	19	9	NW	None	Fair	None	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	19	9	NW	None	Fair	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	19	9	NW	None	Fair	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	19	9	NW	None	Fair	None	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	27	8	W	None	5	None	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	27	8	W	None	5	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	27	8	W	None	5	None	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	27	8	W	None	5	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	27	8	W	None	5	None	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	27	8	W	None	5	None	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	27	8	W	None	5	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	27	8	W	None	5	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	27	8	W	None	5	None	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	25	13	SW	Light Rain	Overcast	Light Rain	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	25	13	SW	Light Rain	Overcast	Light Rain	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	25	13	SW	Light Rain	Overcast	Light Rain	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	25	13	SW	Light Rain	Overcast	Light Rain	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	25	13	SW	Light Rain	Overcast	Light Rain	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	25	13	SW	Light Rain	Overcast	Light Rain	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	25	13	SW	Light Rain	Overcast	Light Rain	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	25	13	SW	Light Rain	Overcast	Light Rain	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	25	13	SW	Light Rain	Overcast	Light Rain	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	25	13	SW	Light Rain	Overcast	Light Rain	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	26	20	SW	None	5	None	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	26	20	SW	None	5	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	26	20	SW	None	5	None	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	26	20	SW	None	5	None	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	26	20	SW	None	5	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	26	20	SW	None	5	None	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	26	20	SW	None	5	None	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	26	20	SW	None	5	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	26	20	SW	None	5	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	26	20	SW	None	5	None	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	27	18	W	None	30	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	27	18	W	None	30	None	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	27	18	W	None	30	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	27	18	W	None	30	None	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	27	18	W	None	30	None	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	27	18	W	None	30	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	27	18	W	None	30	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	27	18	W	None	30	None	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	20	21	W	None	50	Rain	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	20	21	W	None	50	Rain	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	20	21	W	None	50	Rain	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	20	21	W	None	50	Rain	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	20	21	W	None	50	Rain	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	20	21	W	None	50	Rain	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	20	21	W	None	50	Rain	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	20	21	W	None	50	Rain	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	20	21	W	None	50	Rain	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	15	17	NW	None	10	Light Rain	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	15	17	NW	None	10	Light Rain	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	15	17	NW	None	10	Light Rain	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	15	17	NW	None	10	Light Rain	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	15	17	NW	None	10	Light Rain	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	15	17	NW	None	10	Light Rain	

Appendix F1: Weekly Mortality Monitoring Survey Record

project_name	turbine_number	treatment_group	day	month	year	start_time	end_time	duration_min	number_of_searchers	searchers_names	days_since_last_search	actual_area_searched_m2
Adelaide Wind Farm	20	Subset	9	6	2016	13:50	14:20	30	1	Nash Colville	3	4500
Adelaide Wind Farm	22	Subset	9	6	2016	14:25	14:55	30	1	Nash Colville	3	7854
Adelaide Wind Farm	27	Subset	9	6	2016	15:05	15:40	35	1	Nash Colville	3	7854
Adelaide Wind Farm	6	Subset	13	6	2016	11:30	12:00	30	1	Nash Colville	4	4000
Adelaide Wind Farm	7	Subset	13	6	2016	12:05	12:35	30	1	Nash Colville	4	7854
Adelaide Wind Farm	11	Subset	13	6	2016	12:40	13:10	30	1	Nash Colville	4	4500
Adelaide Wind Farm	12	Subset	13	6	2016	13:10	13:35	25	1	Nash Colville	4	3000
Adelaide Wind Farm	14	Subset	13	6	2016	13:40	14:10	30	1	Nash Colville	7	7854
Adelaide Wind Farm	19	Subset	13	6	2016	14:15	14:45	30	1	Nash Colville	4	7854
Adelaide Wind Farm	20	Subset	13	6	2016	14:50	15:15	25	1	Nash Colville	4	4500
Adelaide Wind Farm	22	Subset	13	6	2016	15:20	15:50	30	1	Nash Colville	4	7854
Adelaide Wind Farm	17	Subset	13	6	2016	15:55	16:25	30	1	Nash Colville	4	6500
Adelaide Wind Farm	6	Subset	20	6	2016	10:50	11:15	25	1	Nash Colville	7	4000
Adelaide Wind Farm	7	Subset	20	6	2016	11:20	11:50	30	1	Nash Colville	7	7854
Adelaide Wind Farm	11	Subset	20	6	2016	11:55	12:25	30	1	Nash Colville	7	4500
Adelaide Wind Farm	12	Subset	20	6	2016	12:25	12:50	25	1	Nash Colville	7	3000
Adelaide Wind Farm	14	Subset	20	6	2016	12:55	13:25	30	1	Nash Colville	7	7854
Adelaide Wind Farm	17	Subset	20	6	2016	13:30	14:00	30	1	Nash Colville	7	6500
Adelaide Wind Farm	19	Subset	20	6	2016	14:05	14:35	30	1	Nash Colville	7	7854
Adelaide Wind Farm	22	Subset	20	6	2016	14:40	15:10	30	1	Nash Colville	7	7854
Adelaide Wind Farm	20	Subset	20	6	2016	15:15	15:45	30	1	Nash Colville	7	4500
Adelaide Wind Farm	6	Subset	23	6	2016	10:15	10:45	30	1	Nash Colville	3	4000
Adelaide Wind Farm	7	Subset	23	6	2016	10:50	11:20	30	1	Nash Colville	3	7854
Adelaide Wind Farm	11	Subset	23	6	2016	11:25	11:55	30	1	Nash Colville	3	4500
Adelaide Wind Farm	12	Subset	23	6	2016	12:00	12:25	25	1	Nash Colville	3	3000
Adelaide Wind Farm	14	Subset	23	6	2016	12:30	13:00	30	1	Nash Colville	3	7854
Adelaide Wind Farm	17	Subset	23	6	2016	13:05	13:35	30	1	Nash Colville	3	6500
Adelaide Wind Farm	19	Subset	23	6	2016	13:40	14:15	35	1	Nash Colville	3	7854
Adelaide Wind Farm	20	Subset	23	6	2016	14:25	14:55	30	1	Nash Colville	3	6500
Adelaide Wind Farm	22	Subset	23	6	2016	15:00	15:35	35	1	Nash Colville	3	7854
Adelaide Wind Farm	27	Subset	23	6	2016	15:45	16:20	35	1	Nash Colville	14	7854
Adelaide Wind Farm	6	Subset	27	6	2016	10:50	11:15	25	1	Nash Colville	4	3500
Adelaide Wind Farm	7	Subset	27	6	2016	11:20	11:50	30	1	Nash Colville	4	7854
Adelaide Wind Farm	11	Subset	27	6	2016	11:55	12:25	30	1	Nash Colville	4	7854
Adelaide Wind Farm	12	Subset	27	6	2016	12:30	12:55	25	1	Nash Colville	4	4500
Adelaide Wind Farm	14	Subset	27	6	2016	13:00	13:30	30	1	Nash Colville	4	3000
Adelaide Wind Farm	17	Subset	27	6	2016	13:35	14:05	30	1	Nash Colville	4	6500
Adelaide Wind Farm	19	Subset	27	6	2016	14:10	14:40	30	1	Nash Colville	4	7854
Adelaide Wind Farm	20	Subset	27	6	2016	14:45	15:15	30	1	Nash Colville	4	7854
Adelaide Wind Farm	22	Subset	27	6	2016	15:20	15:50	30	1	Nash Colville	4	7854
Adelaide Wind Farm	27	Subset	27	6	2016	15:55	16:30	35	1	Nash Colville	4	7854
Adelaide Wind Farm	6	Subset	29	6	2016	10:55	11:20	25	1	Nash Colville	2	3500
Adelaide Wind Farm	11	Subset	29	6	2016	11:25	11:55	30	1	Nash Colville	2	7854
Adelaide Wind Farm	12	Subset	29	6	2016	12:00	12:25	25	1	Nash Colville	2	4500
Adelaide Wind Farm	14	Subset	29	6	2016	12:30	13:00	30	1	Nash Colville	2	3000
Adelaide Wind Farm	17	Subset	29	6	2016	13:05	13:35	30	1	Nash Colville	2	6500
Adelaide Wind Farm	19	Subset	29	6	2016	13:40	14:10	30	1	Nash Colville	2	7854
Adelaide Wind Farm	20	Subset	29	6	2016	14:15	14:45	30	1	Nash Colville	2	7854
Adelaide Wind Farm	22	Subset	29	6	2016	14:50	15:20	30	1	Nash Colville	2	7854
Adelaide Wind Farm	27	Subset	29	6	2016	15:25	15:55	30	1	Nash Colville	2	7854
Adelaide Wind Farm	6	Subset	4	7	2016	11:05	11:35	30	1	Nash Colville	5	3500
Adelaide Wind Farm	7	Subset	4	7	2016	11:40	12:10	30	1	Nash Colville	7	7854
Adelaide Wind Farm	11	Subset	4	7	2016	12:15	12:45	30	1	Nash Colville	5	7854
Adelaide Wind Farm	12	Subset	4	7	2016	12:50	13:20	30	1	Nash Colville	5	4500
Adelaide Wind Farm	14	Subset	4	7	2016	13:25	13:55	30	1	Nash Colville	5	3000
Adelaide Wind Farm	17	Subset	4	7	2016	14:00	14:30	30	1	Nash Colville	5	6500

Appendix F1: Weekly Mortality Monitoring Survey Record

project_name	turbine_number	dog_used	search_area_shape	search_area_dimension	transect_separation_m	temp_celsius	wind_speed	wind_direction	precipitation	cloud_cover_percent	signif_weather	comments
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	15	17	NW	None	10	Light Rain	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	15	17	NW	None	10	Light Rain	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	15	17	NW	None	10	Light Rain	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	19	15	W	Light Rain	70	Drizzle	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	19	15	W	Light Rain	70	Drizzle	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	19	15	W	Light Rain	70	Drizzle	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	19	15	W	Light Rain	70	Drizzle	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	19	15	W	Light Rain	70	Drizzle	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	19	15	W	Light Rain	70	Drizzle	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	19	15	W	Light Rain	70	Drizzle	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	19	15	W	Light Rain	70	Drizzle	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	19	15	W	Light Rain	70	Drizzle	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	30	26	SW	Light Rain	40	None	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	30	26	SW	Light Rain	40	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	30	26	SW	Light Rain	40	None	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	30	26	SW	Light Rain	40	None	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	30	26	SW	Light Rain	40	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	30	26	SW	Light Rain	40	None	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	30	26	SW	Light Rain	40	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	30	26	SW	Light Rain	40	None	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	30	26	SW	Light Rain	40	None	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	22	14	E	None	40	None	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	22	14	E	None	40	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	22	14	E	None	40	None	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	22	14	E	None	40	None	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	22	14	E	None	40	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	22	14	E	None	40	None	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	22	14	E	None	40	None	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	22	14	E	None	40	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	22	14	E	None	40	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	22	14	E	None	40	None	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	30	15	W	None	20	Light Rain	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	30	15	W	None	20	Light Rain	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	30	15	W	None	20	Light Rain	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	30	15	W	None	20	Light Rain	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	30	15	W	None	20	Light Rain	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	30	15	W	None	20	Light Rain	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	30	15	W	None	20	Light Rain	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	30	15	W	None	20	Light Rain	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	30	15	W	None	20	Light Rain	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	30	15	W	None	20	Light Rain	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	22	6	N	None	5	Drizzle	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	22	6	N	None	5	Drizzle	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	22	6	N	None	5	Drizzle	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	22	6	N	None	5	Drizzle	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	22	6	N	None	5	Drizzle	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	22	6	N	None	5	Drizzle	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	22	6	N	None	5	Drizzle	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	22	6	N	None	5	Drizzle	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	22	6	N	None	5	Drizzle	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	27	19	S	None	20	None	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	27	19	S	None	20	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	27	19	S	None	20	None	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	27	19	S	None	20	None	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	27	19	S	None	20	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	27	19	S	None	20	None	

Appendix F1: Weekly Mortality Monitoring Survey Record

project_name	turbine_number	treatment_group	day	month	year	start_time	end_time	duration_min	number_of_searchers	searchers_names	days_since_last_search	actual_area_searched_m2
Adelaide Wind Farm	19	Subset	4	7	2016	14:35	15:05	30	1	Nash Colville	5	7854
Adelaide Wind Farm	20	Subset	4	7	2016	15:10	15:40	30	1	Nash Colville	5	7854
Adelaide Wind Farm	22	Subset	4	7	2016	15:45	16:15	30	1	Nash Colville	5	7854
Adelaide Wind Farm	27	Subset	4	7	2016	16:20	16:50	30	1	Nash Colville	5	7854
Adelaide Wind Farm	6	Subset	7	7	2016	10:30	11:00	30	1	Nash Colville	3	3500
Adelaide Wind Farm	11	Subset	7	7	2016	11:05	11:35	30	1	Nash Colville	3	6500
Adelaide Wind Farm	12	Subset	7	7	2016	11:40	12:10	30	1	Nash Colville	3	4500
Adelaide Wind Farm	14	Subset	7	7	2016	12:15	12:45	30	1	Nash Colville	3	4000
Adelaide Wind Farm	17	Subset	7	7	2016	12:50	13:20	30	1	Nash Colville	3	6500
Adelaide Wind Farm	19	Subset	7	7	2016	13:25	13:55	30	1	Nash Colville	3	6500
Adelaide Wind Farm	20	Subset	7	7	2016	14:00	14:30	30	1	Nash Colville	3	7854
Adelaide Wind Farm	22	Subset	7	7	2016	14:35	15:05	30	1	Nash Colville	3	7854
Adelaide Wind Farm	27	Subset	7	7	2016	15:10	15:45	35	1	Nash Colville	3	7854
Adelaide Wind Farm	6	Subset	11	7	2016	11:00	11:30	30	1	Nash Colville	4	3500
Adelaide Wind Farm	7	Subset	11	7	2016	11:35	12:05	30	1	Nash Colville	7	7854
Adelaide Wind Farm	11	Subset	11	7	2016	12:10	12:40	30	1	Nash Colville	4	6500
Adelaide Wind Farm	12	Subset	11	7	2016	12:45	13:15	30	1	Nash Colville	4	4500
Adelaide Wind Farm	14	Subset	11	7	2016	13:20	13:50	30	1	Nash Colville	4	4000
Adelaide Wind Farm	17	Subset	11	7	2016	13:55	14:20	25	1	Nash Colville	4	6500
Adelaide Wind Farm	19	Subset	11	7	2016	14:25	14:55	30	1	Nash Colville	4	6500
Adelaide Wind Farm	27	Subset	11	7	2016	15:10	15:40	30	1	Nash Colville	4	7854
Adelaide Wind Farm	6	Subset	14	7	2016	11:00	11:30	30	1	Nash Colville	3	3500
Adelaide Wind Farm	7	Subset	14	7	2016	11:35	12:05	30	1	Nash Colville	3	7854
Adelaide Wind Farm	11	Subset	14	7	2016	12:10	12:40	30	1	Nash Colville	3	7854
Adelaide Wind Farm	12	Subset	14	7	2016	12:45	13:15	30	1	Nash Colville	3	4500
Adelaide Wind Farm	6	Subset	18	7	2016	10:45	11:15	30	1	Nash Colville	4	5000
Adelaide Wind Farm	11	Subset	18	7	2016	11:20	11:50	30	1	Nash Colville	4	7500
Adelaide Wind Farm	12	Subset	18	7	2016	11:55	12:25	30	1	Nash Colville	4	7000
Adelaide Wind Farm	14	Subset	18	7	2016	12:30	13:00	30	1	Nash Colville	7	4000
Adelaide Wind Farm	17	Subset	18	7	2016	13:05	13:35	30	1	Nash Colville	7	7500
Adelaide Wind Farm	19	Subset	18	7	2016	13:40	14:10	30	1	Nash Colville	7	6500
Adelaide Wind Farm	20	Subset	18	7	2016	14:15	14:45	30	1	Nash Colville	11	7854
Adelaide Wind Farm	22	Subset	18	7	2016	14:50	15:20	30	1	Nash Colville	11	7854
Adelaide Wind Farm	27	Subset	18	7	2016	15:25	16:00	35	1	Nash Colville	7	7854
Adelaide Wind Farm	6	Subset	21	7	2016	10:50	11:20	30	1	Nash Colville	3	5000
Adelaide Wind Farm	7	Subset	21	7	2016	11:25	11:55	30	1	Nash Colville	7	7854
Adelaide Wind Farm	11	Subset	21	7	2016	12:00	12:30	30	1	Nash Colville	3	7500
Adelaide Wind Farm	12	Subset	21	7	2016	12:35	13:05	30	1	Nash Colville	3	7000
Adelaide Wind Farm	14	Subset	21	7	2016	13:10	13:40	30	1	Nash Colville	3	4000
Adelaide Wind Farm	17	Subset	21	7	2016	13:45	14:15	30	1	Nash Colville	3	7500
Adelaide Wind Farm	19	Subset	21	7	2016	14:20	14:45	25	1	Nash Colville	3	6500
Adelaide Wind Farm	20	Subset	21	7	2016	14:50	15:20	30	1	Nash Colville	3	7854
Adelaide Wind Farm	22	Subset	21	7	2016	15:25	16:05	40	1	Nash Colville	3	7854
Adelaide Wind Farm	27	Subset	21	7	2016	16:10	16:40	30	1	Nash Colville	3	7854
Adelaide Wind Farm	6	Subset	26	7	2016	11:35	12:00	25	1	Nash Colville	5	5000
Adelaide Wind Farm	7	Subset	26	7	2016	12:05	12:30	25	1	Nash Colville	5	7854
Adelaide Wind Farm	11	Subset	26	7	2016	12:35	13:05	30	1	Nash Colville	5	7000
Adelaide Wind Farm	12	Subset	26	7	2016	13:05	13:35	30	1	Nash Colville	5	7000
Adelaide Wind Farm	14	Subset	26	7	2016	13:40	14:05	25	1	Nash Colville	5	4000
Adelaide Wind Farm	17	Subset	26	7	2016	14:10	14:35	25	1	Nash Colville	5	7000
Adelaide Wind Farm	20	Subset	26	7	2016	14:40	15:10	30	1	Nash Colville	5	7854
Adelaide Wind Farm	22	Subset	26	7	2016	15:15	15:45	30	1	Nash Colville	5	7854
Adelaide Wind Farm	6	Subset	29	7	2016	8:55	9:20	25	1	Nash Colville	3	5000
Adelaide Wind Farm	7	Subset	29	7	2016	9:25	9:55	30	1	Nash Colville	3	7854
Adelaide Wind Farm	11	Subset	29	7	2016	10:00	10:30	30	1	Nash Colville	3	7000
Adelaide Wind Farm	12	Subset	29	7	2016	10:35	11:05	30	1	Nash Colville	3	7000

Appendix F1: Weekly Mortality Monitoring Survey Record

project_name	turbine_number	dog_used	search_area_shape	search_area_dimension	transect_separation_m	temp_celsius	wind_speed	wind_direction	precipitation	cloud_cover_percent	signif_weather	comments
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	27	19	S	None	20	None	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	27	19	S	None	20	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	27	19	S	None	20	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	27	19	S	None	20	None	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	26	5	SW	None	30	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	26	5	SW	None	30	None	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	26	5	SW	None	30	None	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	26	5	SW	None	30	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	26	5	SW	None	30	None	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	26	5	SW	None	30	None	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	26	5	SW	None	30	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	26	5	SW	None	30	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	26	5	SW	None	30	None	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	26	16	N	None	20	None	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	26	16	N	None	20	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	26	16	N	None	20	None	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	26	16	N	None	20	None	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	26	16	N	None	20	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	26	16	N	None	20	None	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	26	16	N	None	20	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	26	16	N	None	20	None	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	24	16	W	None	30	None	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	24	16	W	None	30	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	24	16	W	None	30	None	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	24	16	W	None	30	None	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	26	18	NW	None	30	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	26	18	NW	None	30	None	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	26	18	NW	None	30	None	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	26	18	NW	None	30	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	26	18	NW	None	30	None	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	26	18	NW	None	30	None	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	26	18	NW	None	30	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	26	18	NW	None	30	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	26	18	NW	None	30	None	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	30	11	N	None	15	None	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	30	11	N	None	15	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	30	11	N	None	15	None	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	30	11	N	None	15	None	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	30	11	N	None	15	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	30	11	N	None	15	None	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	30	11	N	None	15	None	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	30	11	N	None	15	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	30	11	N	None	15	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	30	11	N	None	15	None	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	27	18	NW	None	25	None	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	27	18	NW	None	25	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	27	18	NW	None	25	None	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	27	18	NW	None	25	None	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	27	18	NW	None	25	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	27	18	NW	None	25	None	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	27	18	NW	None	25	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	27	18	NW	None	25	None	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	28	16	SE	None	65	None	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	28	16	SE	None	65	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	28	16	SE	None	65	None	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	28	16	SE	None	65	None	

Appendix F1: Weekly Mortality Monitoring Survey Record

project_name	turbine_number	treatment_group	day	month	year	start_time	end_time	duration_min	number_of_searchers	searchers_names	days_since_last_search	actual_area_searched_m2
Adelaide Wind Farm	14	Subset	29	7	2016	11:10	11:40	30	1	Nash Colville	3	4000
Adelaide Wind Farm	17	Subset	29	7	2016	11:45	12:15	30	1	Nash Colville	3	6600
Adelaide Wind Farm	19	Subset	29	7	2016	12:25	12:55	30	1	Nash Colville	8	6000
Adelaide Wind Farm	20	Subset	29	7	2016	13:00	13:30	30	1	Nash Colville	3	7854
Adelaide Wind Farm	22	Subset	29	7	2016	13:35	14:05	30	1	Nash Colville	3	7854
Adelaide Wind Farm	27	Subset	29	7	2016	14:10	14:40	30	1	Nash Colville	8	7854
Adelaide Wind Farm	6	Subset	2	8	2016	11:00	11:25	25	1	Nash Colville	4	6000
Adelaide Wind Farm	7	Subset	2	8	2016	11:30	12:00	30	1	Nash Colville	4	6500
Adelaide Wind Farm	11	Subset	2	8	2016	12:05	12:35	30	1	Nash Colville	4	7854
Adelaide Wind Farm	12	Subset	2	8	2016	12:40	13:10	30	1	Nash Colville	4	7000
Adelaide Wind Farm	14	Subset	2	8	2016	13:15	13:45	30	1	Nash Colville	4	3000
Adelaide Wind Farm	19	Subset	2	8	2016	13:50	14:20	30	1	Nash Colville	4	5000
Adelaide Wind Farm	20	Subset	2	8	2016	15:00	15:30	30	1	Nash Colville	4	5500
Adelaide Wind Farm	22	Subset	2	8	2016	15:35	16:05	30	1	Nash Colville	4	6500
Adelaide Wind Farm	6	Subset	4	8	2016	10:00	10:25	25	1	Nash Colville	2	6250
Adelaide Wind Farm	7	Subset	4	8	2016	10:35	11:00	25	1	Nash Colville	2	6500
Adelaide Wind Farm	11	Subset	4	8	2016	11:05	11:35	30	1	Nash Colville	2	7854
Adelaide Wind Farm	12	Subset	4	8	2016	11:40	12:10	30	1	Nash Colville	2	7000
Adelaide Wind Farm	14	Subset	4	8	2016	12:15	12:45	30	1	Nash Colville	2	3000
Adelaide Wind Farm	17	Subset	4	8	2016	12:50	13:15	25	1	Nash Colville	6	6500
Adelaide Wind Farm	22	Subset	4	8	2016	13:20	13:50	30	1	Nash Colville	2	6000
Adelaide Wind Farm	27	Subset	4	8	2016	13:55	14:25	30	1	Nash Colville	6	6000
Adelaide Wind Farm	6	Subset	8	8	2016	11:50	12:20	30	1	Nash Colville	4	6250
Adelaide Wind Farm	7	Subset	8	8	2016	12:25	12:55	30	1	Nash Colville	4	6500
Adelaide Wind Farm	11	Subset	8	8	2016	13:00	13:30	30	1	Nash Colville	4	7854
Adelaide Wind Farm	12	Subset	8	8	2016	13:35	14:05	30	1	Nash Colville	4	7000
Adelaide Wind Farm	14	Subset	8	8	2016	14:10	14:40	30	1	Nash Colville	4	3000
Adelaide Wind Farm	17	Subset	8	8	2016	14:45	15:15	30	1	Nash Colville	4	6000
Adelaide Wind Farm	20	Subset	8	8	2016	15:25	15:55	30	1	Nash Colville	6	5000
Adelaide Wind Farm	22	Subset	8	8	2016	16:00	16:35	35	1	Nash Colville	4	5500
Adelaide Wind Farm	27	Subset	8	8	2016	16:40	17:15	35	1	Nash Colville	4	6000
Adelaide Wind Farm	6	Subset	15	8	2016	10:10	10:35	25	1	Nash Colville	7	5500
Adelaide Wind Farm	7	Subset	15	8	2016	10:40	11:05	25	1	Nash Colville	7	6000
Adelaide Wind Farm	11	Subset	15	8	2016	11:10	11:40	30	1	Nash Colville	7	7000
Adelaide Wind Farm	12	Subset	15	8	2016	11:45	12:15	30	1	Nash Colville	7	6750
Adelaide Wind Farm	14	Subset	15	8	2016	12:20	12:45	25	1	Nash Colville	7	3000
Adelaide Wind Farm	17	Subset	15	8	2016	12:50	13:20	30	1	Nash Colville	7	5500
Adelaide Wind Farm	19	Subset	15	8	2016	13:25	13:50	25	1	Nash Colville	13	4250
Adelaide Wind Farm	20	Subset	15	8	2016	13:55	14:25	30	1	Nash Colville	7	5000
Adelaide Wind Farm	22	Subset	15	8	2016	14:30	15:00	30	1	Nash Colville	7	4500
Adelaide Wind Farm	27	Subset	15	8	2016	15:05	15:30	25	1	Nash Colville	7	4750
Adelaide Wind Farm	6	Subset	18	8	2016	10:40	11:05	25	1	Nash Colville	3	6000
Adelaide Wind Farm	7	Subset	18	8	2016	11:10	11:35	25	1	Nash Colville	3	6000
Adelaide Wind Farm	11	Subset	18	8	2016	11:40	12:10	30	1	Nash Colville	3	7000
Adelaide Wind Farm	14	Subset	18	8	2016	12:15	12:45	30	1	Nash Colville	3	3250
Adelaide Wind Farm	17	Subset	18	8	2016	12:50	13:15	25	1	Nash Colville	3	5250
Adelaide Wind Farm	19	Subset	18	8	2016	13:20	13:45	25	1	Nash Colville	3	4000
Adelaide Wind Farm	20	Subset	18	8	2016	13:50	14:20	30	1	Nash Colville	3	5500
Adelaide Wind Farm	22	Subset	18	8	2016	14:25	14:50	25	1	Nash Colville	3	4500
Adelaide Wind Farm	27	Subset	18	8	2016	14:55	15:25	30	1	Nash Colville	3	5000
Adelaide Wind Farm	6	Subset	22	8	2016	9:45	10:10	25	1	Nash Colville	4	6000
Adelaide Wind Farm	7	Subset	22	8	2016	10:15	10:40	25	1	Nash Colville	4	6000
Adelaide Wind Farm	11	Subset	22	8	2016	10:45	11:15	30	1	Nash Colville	4	7000
Adelaide Wind Farm	14	Subset	22	8	2016	11:20	11:50	30	1	Nash Colville	4	3250
Adelaide Wind Farm	19	Subset	22	8	2016	11:55	12:20	25	1	Nash Colville	4	3750
Adelaide Wind Farm	20	Subset	22	8	2016	12:25	12:55	30	1	Nash Colville	4	6000

Appendix F1: Weekly Mortality Monitoring Survey Record

project_name	turbine_number	dog_used	search_area_shape	search_area_dimension	transect_separation_m	temp_celsius	wind_speed	wind_direction	precipitation	cloud_cover_percent	signif_weather	comments
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	28	16	SE	None	65	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	28	16	SE	None	65	None	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	28	16	SE	None	65	None	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	28	16	SE	None	65	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	28	16	SE	None	65	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	28	16	SE	None	65	None	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	30	27	S	None	15	Rain	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	30	27	S	None	15	Rain	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	30	27	S	None	15	Rain	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	30	27	S	None	15	Rain	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	30	27	S	None	15	Rain	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	30	27	S	None	15	Rain	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	30	27	S	None	15	Rain	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	30	27	S	None	15	Rain	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	31	19	S	None	15	None	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	31	19	S	None	15	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	31	19	S	None	15	None	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	31	19	S	None	15	None	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	31	19	S	None	15	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	31	19	S	None	15	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	31	19	S	None	15	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	31	19	S	None	15	None	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	29	14	S	None	30	None	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	29	14	S	None	30	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	29	14	S	None	30	None	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	29	14	S	None	30	None	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	29	14	S	None	30	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	29	14	S	None	30	None	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	29	14	S	None	30	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	29	14	S	None	30	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	29	14	S	None	30	None	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	28	22	SE	Light Rain	70	Drizzle	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	28	22	SE	Light Rain	70	Drizzle	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	28	22	SE	Light Rain	70	Drizzle	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	28	22	SE	Light Rain	70	Drizzle	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	28	22	SE	Light Rain	70	Drizzle	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	28	22	SE	Light Rain	70	Drizzle	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	28	22	SE	Light Rain	70	Drizzle	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	28	22	SE	Light Rain	70	Drizzle	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	28	22	SE	Light Rain	70	Drizzle	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	28	22	SE	Light Rain	70	Drizzle	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	28	7	N	None	10	None	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	28	7	N	None	10	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	28	7	N	None	10	None	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	28	7	N	None	10	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	28	7	N	None	10	None	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	28	7	N	None	10	None	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	28	7	N	None	10	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	28	7	N	None	10	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	28	7	N	None	10	None	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	26	14	NE	None	30	Light Rain	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	26	14	NE	None	30	Light Rain	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	26	14	NE	None	30	Light Rain	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	26	14	NE	None	30	Light Rain	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	26	14	NE	None	30	Light Rain	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	26	14	NE	None	30	Light Rain	

Appendix F1: Weekly Mortality Monitoring Survey Record

project_name	turbine_number	treatment_group	day	month	year	start_time	end_time	duration_min	number_of_searchers	searchers_names	days_since_last_search	actual_area_searched_m2
Adelaide Wind Farm	22	Subset	22	8	2016	13:00	13:25	25	1	Nash Colville	4	4500
Adelaide Wind Farm	27	Subset	22	8	2016	13:30	14:00	30	1	Nash Colville	4	5000
Adelaide Wind Farm	6	Subset	26	8	2016	11:50	12:15	25	1	Nash Colville	4	6250
Adelaide Wind Farm	7	Subset	26	8	2016	12:20	12:45	25	1	Nash Colville	4	6000
Adelaide Wind Farm	12	Subset	26	8	2016	12:50	13:20	30	1	Nash Colville	11	6750
Adelaide Wind Farm	14	Subset	26	8	2016	13:25	13:50	25	1	Nash Colville	4	3250
Adelaide Wind Farm	19	Subset	26	8	2016	13:55	14:20	25	1	Nash Colville	4	3750
Adelaide Wind Farm	20	Subset	26	8	2016	14:25	14:55	30	1	Nash Colville	4	6500
Adelaide Wind Farm	22	Subset	26	8	2016	15:00	15:25	25	1	Nash Colville	4	4500
Adelaide Wind Farm	27	Subset	26	8	2016	15:30	15:55	25	1	Nash Colville	4	5000
Adelaide Wind Farm	6	Subset	29	8	2016	11:15	11:40	25	1	Nash Colville	3	6500
Adelaide Wind Farm	7	Subset	29	8	2016	11:45	12:10	25	1	Nash Colville	3	6000
Adelaide Wind Farm	11	Subset	29	8	2016	12:20	12:45	25	1	Nash Colville	7	7000
Adelaide Wind Farm	12	Subset	29	8	2016	12:50	13:15	25	1	Nash Colville	3	6750
Adelaide Wind Farm	14	Subset	29	8	2016	13:20	13:50	30	1	Nash Colville	3	3250
Adelaide Wind Farm	17	Subset	29	8	2016	13:55	14:20	25	1	Nash Colville	11	5000
Adelaide Wind Farm	19	Subset	29	8	2016	14:25	14:50	25	1	Nash Colville	3	3500
Adelaide Wind Farm	20	Subset	29	8	2016	14:55	15:20	25	1	Nash Colville	3	7000
Adelaide Wind Farm	22	Subset	29	8	2016	15:25	15:50	25	1	Nash Colville	3	4500
Adelaide Wind Farm	27	Subset	29	8	2016	15:55	16:25	30	1	Nash Colville	3	5000
Adelaide Wind Farm	6	Subset	1	9	2016	11:30	12:00	30	1	Dan Dilario	3	5500
Adelaide Wind Farm	12	Subset	1	9	2016	12:15	12:45	30	1	Dan Dilario	3	6500
Adelaide Wind Farm	14	Subset	1	9	2016	12:50	13:20	30	1	Dan Dilario	3	1600
Adelaide Wind Farm	19	Subset	1	9	2016	13:25	13:55	30	1	Dan Dilario	3	1750
Adelaide Wind Farm	20	Subset	1	9	2016	14:00	14:30	30	1	Dan Dilario	3	7850
Adelaide Wind Farm	22	Subset	1	9	2016	15:00	15:30	30	1	Dan Dilario	3	2175
Adelaide Wind Farm	27	Subset	1	9	2016	15:35	16:00	25	1	Dan Dilario	3	1300
Adelaide Wind Farm	7	Subset	1	9	2016	16:05	16:35	30	1	Dan Dilario	3	1050
Adelaide Wind Farm	7	Subset	6	9	2016	12:00	12:30	30	1	Dan Dilario	5	1125
Adelaide Wind Farm	6	Subset	6	9	2016	12:35	13:05	30	1	Dan Dilario	5	5875
Adelaide Wind Farm	11	Subset	6	9	2016	13:10	13:40	30	1	Dan Dilario	8	7475
Adelaide Wind Farm	12	Subset	6	9	2016	13:45	14:15	30	1	Dan Dilario	5	7100
Adelaide Wind Farm	14	Subset	6	9	2016	14:20	14:50	30	1	Dan Dilario	5	1375
Adelaide Wind Farm	17	Subset	6	9	2016	14:55	15:25	30	1	Dan Dilario	8	3150
Adelaide Wind Farm	19	Subset	6	9	2016	15:30	16:00	30	1	Dan Dilario	5	1550
Adelaide Wind Farm	20	Subset	6	9	2016	16:05	16:35	30	1	Dan Dilario	5	7750
Adelaide Wind Farm	22	Subset	6	9	2016	16:40	17:10	30	1	Dan Dilario	5	1675
Adelaide Wind Farm	27	Subset	6	9	2016	17:15	17:45	30	1	Dan Dilario	5	1175
Adelaide Wind Farm	7	Subset	8	9	2016	11:05	11:35	30	1	Dan Dilario	2	1125
Adelaide Wind Farm	12	Subset	8	9	2016	11:40	12:10	30	1	Dan Dilario	2	6250
Adelaide Wind Farm	14	Subset	8	9	2016	12:15	12:45	30	1	Dan Dilario	2	825
Adelaide Wind Farm	20	Subset	8	9	2016	12:50	13:20	30	1	Dan Dilario	2	7650
Adelaide Wind Farm	27	Subset	8	9	2016	13:25	13:55	30	1	Dan Dilario	2	1550
Adelaide Wind Farm	22	Subset	8	9	2016	14:00	14:30	30	1	Dan Dilario	2	900
Adelaide Wind Farm	17	Subset	8	9	2016	14:35	15:05	30	1	Dan Dilario	2	3575
Adelaide Wind Farm	19	Subset	8	9	2016	15:10	15:40	30	1	Dan Dilario	2	1550
Adelaide Wind Farm	11	Subset	8	9	2016	15:45	16:15	30	1	Dan Dilario	2	7450
Adelaide Wind Farm	6	Subset	8	9	2016	16:20	16:50	30	1	Dan Dilario	2	5625
Adelaide Wind Farm	7	Subset	12	9	2016	12:30	13:00	30	1	Dan Dilario	4	1075
Adelaide Wind Farm	11	Subset	12	9	2016	13:05	13:35	30	1	Dan Dilario	4	7725
Adelaide Wind Farm	12	Subset	12	9	2016	13:40	14:10	30	1	Dan Dilario	4	7850
Adelaide Wind Farm	14	Subset	12	9	2016	14:15	14:45	30	1	Dan Dilario	4	975
Adelaide Wind Farm	17	Subset	12	9	2016	14:50	15:20	30	1	Dan Dilario	4	3275
Adelaide Wind Farm	19	Subset	12	9	2016	15:25	15:55	30	1	Dan Dilario	4	1550
Adelaide Wind Farm	20	Subset	12	9	2016	16:00	16:30	30	1	Dan Dilario	4	7675
Adelaide Wind Farm	22	Subset	12	9	2016	16:35	17:05	30	1	Dan Dilario	4	950

Appendix F1: Weekly Mortality Monitoring Survey Record

project_name	turbine_number	dog_used	search_area_shape	search_area_dimension	transect_separation_m	temp_celsius	wind_speed	wind_direction	precipitation	cloud_cover_percent	signif_weather	comments
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	26	14	NE	None	30	Light Rain	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	26	14	NE	None	30	Light Rain	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	27	20	S	Drizzle	20	Light Rain	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	27	20	S	Drizzle	20	Light Rain	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	27	20	S	Drizzle	20	Light Rain	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	27	20	S	Drizzle	20	Light Rain	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	27	20	S	Drizzle	20	Light Rain	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	27	20	S	Drizzle	20	Light Rain	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	27	20	S	Drizzle	20	Light Rain	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	27	20	S	Drizzle	20	Light Rain	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	28	12	N	None	20	None	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	28	12	N	None	20	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	28	12	N	None	20	None	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	28	12	N	None	20	None	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	28	12	N	None	20	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	28	12	N	None	20	None	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	28	12	N	None	20	None	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	28	12	N	None	20	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	28	12	N	None	20	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	28	12	N	None	20	None	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	22	18	NW	None	12	None	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	22	18	NW	None	12	None	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	22	18	NW	None	12	None	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	22	18	NW	None	12	None	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	22	18	NW	None	12	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	22	18	NW	None	12	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	22	18	NW	None	12	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	22	18	NW	None	12	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	22	18	NW	None	12	None	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	22	18	NW	None	12	None	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	29	10	SW	None	0	None	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	29	10	SW	None	0	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	29	10	SW	None	0	None	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	29	10	SW	None	0	None	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	29	10	SW	None	0	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	29	10	SW	None	0	None	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	29	10	SW	None	0	None	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	29	10	SW	None	0	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	29	10	SW	None	0	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	29	10	SW	None	0	None	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	26	18	SW	None	18	None	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	26	18	SW	None	18	None	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	26	18	SW	None	18	None	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	26	18	SW	None	18	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	26	18	SW	None	18	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	26	18	SW	None	18	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	26	18	SW	None	18	None	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	26	18	SW	None	18	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	26	18	SW	None	18	None	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	26	18	SW	None	18	None	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	22	11	S	None	6	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	22	11	S	None	6	None	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	22	11	S	None	6	None	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	22	11	S	None	6	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	22	11	S	None	6	None	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	22	11	S	None	6	None	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	22	11	S	None	6	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	22	11	S	None	6	None	

Appendix F1: Weekly Mortality Monitoring Survey Record

project_name	turbine_number	treatment_group	day	month	year	start_time	end_time	duration_min	number_of_searchers	searchers_names	days_since_last_search	actual_area_searched_m2
Adelaide Wind Farm	27	Subset	12	9	2016	17:10	17:40	30	1	Dan Dilario	4	1500
Adelaide Wind Farm	7	Subset	15	9	2016	12:45	13:15	30	1	Dan Dilario	3	1400
Adelaide Wind Farm	6	Subset	15	9	2016	13:20	13:50	30	1	Dan Dilario	7	5500
Adelaide Wind Farm	11	Subset	15	9	2016	13:55	14:25	30	1	Dan Dilario	3	6900
Adelaide Wind Farm	12	Subset	15	9	2016	14:30	15:00	30	1	Dan Dilario	3	7650
Adelaide Wind Farm	14	Subset	15	9	2016	15:05	15:35	30	1	Dan Dilario	3	900
Adelaide Wind Farm	17	Subset	15	9	2016	15:40	16:10	30	1	Dan Dilario	3	3100
Adelaide Wind Farm	19	Subset	15	9	2016	16:15	16:45	30	1	Dan Dilario	3	1400
Adelaide Wind Farm	20	Subset	15	9	2016	16:50	17:20	30	1	Dan Dilario	3	7685
Adelaide Wind Farm	22	Subset	15	9	2016	17:25	17:55	30	1	Dan Dilario	3	1025
Adelaide Wind Farm	27	Subset	15	9	2016	18:00	18:30	30	1	Dan Dilario	3	1750
Adelaide Wind Farm	7	Subset	20	9	2016	13:10	13:40	30	1	Dan Dilario	5	1400
Adelaide Wind Farm	6	Subset	20	9	2016	13:45	14:15	30	1	Dan Dilario	5	1100
Adelaide Wind Farm	11	Subset	20	9	2016	14:20	14:50	30	1	Dan Dilario	5	7500
Adelaide Wind Farm	14	Subset	20	9	2016	15:00	15:30	30	1	Dan Dilario	5	1125
Adelaide Wind Farm	17	Subset	20	9	2016	15:35	16:05	30	1	Dan Dilario	5	3100
Adelaide Wind Farm	19	Subset	20	9	2016	16:10	16:40	30	1	Dan Dilario	5	1400
Adelaide Wind Farm	20	Subset	20	9	2016	16:45	17:15	30	1	Dan Dilario	5	7650
Adelaide Wind Farm	22	Subset	20	9	2016	17:20	17:50	30	1	Dan Dilario	5	1175
Adelaide Wind Farm	27	Subset	20	9	2016	17:55	18:25	30	1	Dan Dilario	5	1675
Adelaide Wind Farm	7	Subset	22	9	2016	11:45	12:15	30	1	Dan Dilario	2	1650
Adelaide Wind Farm	6	Subset	22	9	2016	12:20	12:50	30	1	Dan Dilario	2	1050
Adelaide Wind Farm	11	Subset	22	9	2016	12:55	13:25	30	1	Dan Dilario	2	7125
Adelaide Wind Farm	12	Subset	22	9	2016	13:30	14:00	30	1	Dan Dilario	7	5500
Adelaide Wind Farm	14	Subset	22	9	2016	14:05	14:35	30	1	Dan Dilario	2	1250
Adelaide Wind Farm	17	Subset	22	9	2016	14:40	15:10	30	1	Dan Dilario	2	3300
Adelaide Wind Farm	19	Subset	22	9	2016	15:15	15:45	30	1	Dan Dilario	2	1550
Adelaide Wind Farm	20	Subset	22	9	2016	15:50	16:20	30	1	Dan Dilario	2	5850
Adelaide Wind Farm	22	Subset	22	9	2016	15:50	16:20	30	1	Dan Dilario	2	900
Adelaide Wind Farm	27	Subset	22	9	2016	17:00	17:30	30	1	Dan Dilario	2	1350
Adelaide Wind Farm	7	Subset	26	9	2016	12:35	13:05	30	1	Dan Dilario	4	1250
Adelaide Wind Farm	6	Subset	26	9	2016	13:10	13:40	30	1	Dan Dilario	4	1125
Adelaide Wind Farm	11	Subset	26	9	2016	13:45	14:15	30	1	Dan Dilario	4	7100
Adelaide Wind Farm	12	Subset	26	9	2016	14:20	14:50	30	1	Dan Dilario	4	5300
Adelaide Wind Farm	14	Subset	26	9	2016	14:55	15:25	30	1	Dan Dilario	4	1300
Adelaide Wind Farm	17	Subset	26	9	2016	15:30	16:00	30	1	Dan Dilario	4	3500
Adelaide Wind Farm	19	Subset	26	9	2016	16:05	16:35	30	1	Dan Dilario	4	1150
Adelaide Wind Farm	20	Subset	26	9	2016	16:40	17:10	30	1	Dan Dilario	4	6800
Adelaide Wind Farm	22	Subset	26	9	2016	17:15	17:45	30	1	Dan Dilario	4	1100
Adelaide Wind Farm	27	Subset	26	9	2016	17:50	18:20	30	1	Dan Dilario	4	2750
Adelaide Wind Farm	7	Subset	29	9	2016	9:50	10:20	30	1	Dan Dilario	3	1430
Adelaide Wind Farm	6	Subset	29	9	2016	10:25	10:55	30	1	Dan Dilario	3	975
Adelaide Wind Farm	11	Subset	29	9	2016	11:00	11:30	30	1	Dan Dilario	3	7625
Adelaide Wind Farm	12	Subset	29	9	2016	11:35	12:05	30	1	Dan Dilario	3	7400
Adelaide Wind Farm	14	Subset	29	9	2016	12:10	12:40	30	1	Dan Dilario	3	1450
Adelaide Wind Farm	17	Subset	29	9	2016	12:45	13:15	30	1	Dan Dilario	3	3275
Adelaide Wind Farm	19	Subset	29	9	2016	13:20	13:50	30	1	Dan Dilario	3	1180
Adelaide Wind Farm	20	Subset	29	9	2016	13:55	14:25	30	1	Dan Dilario	3	7200
Adelaide Wind Farm	22	Subset	29	9	2016	14:30	15:00	30	1	Dan Dilario	3	1850
Adelaide Wind Farm	27	Subset	29	9	2016	15:05	15:35	30	1	Dan Dilario	3	1650
Adelaide Wind Farm	6	Subset	3	10	2016	12:00	12:30	30	1	Dan Dilario	4	940
Adelaide Wind Farm	7	Subset	3	10	2016	12:35	13:05	30	1	Dan Dilario	4	2375
Adelaide Wind Farm	11	Subset	3	10	2016	13:10	13:40	30	1	Dan Dilario	4	7325
Adelaide Wind Farm	20	Subset	3	10	2016	13:45	14:15	30	1	Dan Dilario	4	7600
Adelaide Wind Farm	27	Subset	3	10	2016	14:20	14:50	30	1	Dan Dilario	4	3350
Adelaide Wind Farm	22	Subset	3	10	2016	14:55	15:25	30	1	Dan Dilario	4	1700

Appendix F1: Weekly Mortality Monitoring Survey Record

project_name	turbine_number	dog_used	search_area_shape	search_area_dimension	transect_separation_m	temp_celsius	wind_speed	wind_direction	precipitation	cloud_cover_percent	signif_weather	comments
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	22	11	S	None	6	None	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	22	8	NE	None	11	None	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	22	8	NE	None	11	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	22	8	NE	None	11	None	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	22	8	NE	None	11	None	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	22	8	NE	None	11	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	22	8	NE	None	11	None	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	22	8	NE	None	11	None	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	22	8	NE	None	11	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	22	8	NE	None	11	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	22	8	NE	None	11	None	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	26	10	NW	None	0	None	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	26	10	NW	None	0	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	26	10	NW	None	0	None	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	26	10	NW	None	0	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	26	10	NW	None	0	None	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	26	10	NW	None	0	None	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	26	10	NW	None	0	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	26	10	NW	None	0	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	26	10	NW	None	0	None	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	26	11	S	None	0	None	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	26	11	S	None	0	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	26	11	S	None	0	None	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	26	11	S	None	0	None	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	26	11	S	None	0	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	26	11	S	None	0	None	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	26	11	S	None	0	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	26	11	S	None	0	None	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	26	11	S	None	0	None	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	26	11	S	None	0	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	26	11	S	None	0	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	26	11	S	None	0	None	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	17	11	SW	Heavy Rain	72	Heavy Rain	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	17	11	SW	Heavy Rain	72	Heavy Rain	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	17	11	SW	Heavy Rain	72	Heavy Rain	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	17	11	SW	Heavy Rain	72	Heavy Rain	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	17	11	SW	Heavy Rain	72	Heavy Rain	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	17	11	SW	Heavy Rain	72	Heavy Rain	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	17	11	SW	Heavy Rain	72	Heavy Rain	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	17	11	SW	Heavy Rain	72	Heavy Rain	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	17	11	SW	Heavy Rain	72	Heavy Rain	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	17	11	SW	Heavy Rain	72	Heavy Rain	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	16	26	NE	None	14	None	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	16	26	NE	None	14	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	16	26	NE	None	14	None	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	16	26	NE	None	14	None	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	16	26	NE	None	14	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	16	26	NE	None	14	None	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	16	26	NE	None	14	None	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	16	26	NE	None	14	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	16	26	NE	None	14	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	16	26	NE	None	14	None	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	20	10	NW	Rain	22	Light Rain	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	20	10	NW	Rain	22	Light Rain	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	20	10	NW	Rain	22	Light Rain	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	20	10	NW	Rain	22	Light Rain	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	20	10	NW	Rain	22	Light Rain	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	20	10	NW	Rain	22	Light Rain	

Appendix F1: Weekly Mortality Monitoring Survey Record

project_name	turbine_number	treatment_group	day	month	year	start_time	end_time	duration_min	number_of_searchers	searchers_names	days_since_last_search	actual_area_searched_m2
Adelaide Wind Farm	19	Subset	3	10	2016	15:30	16:00	30	1	Dan Dilario	4	1475
Adelaide Wind Farm	17	Subset	3	10	2016	16:05	16:35	30	1	Dan Dilario	4	2875
Adelaide Wind Farm	14	Subset	3	10	2016	16:40	17:10	30	1	Dan Dilario	4	950
Adelaide Wind Farm	7	Subset	6	10	2016	10:45	11:15	30	1	Dan Dilario	3	2100
Adelaide Wind Farm	6	Subset	6	10	2016	11:20	11:50	30	1	Dan Dilario	3	825
Adelaide Wind Farm	11	Subset	6	10	2016	11:55	12:25	30	1	Dan Dilario	3	6925
Adelaide Wind Farm	12	Subset	6	10	2016	12:30	13:00	30	1	Dan Dilario	7	7375
Adelaide Wind Farm	14	Subset	6	10	2016	13:05	13:35	30	1	Dan Dilario	3	1075
Adelaide Wind Farm	17	Subset	6	10	2016	13:40	14:10	30	1	Dan Dilario	3	4100
Adelaide Wind Farm	19	Subset	6	10	2016	14:15	14:45	30	1	Dan Dilario	3	1125
Adelaide Wind Farm	20	Subset	6	10	2016	14:50	15:20	30	1	Dan Dilario	3	7650
Adelaide Wind Farm	22	Subset	6	10	2016	15:25	15:55	30	1	Dan Dilario	3	1875
Adelaide Wind Farm	27	Subset	6	10	2016	16:00	16:30	30	1	Dan Dilario	3	3800
Adelaide Wind Farm	7	Subset	11	10	2016	11:20	11:50	30	1	Dan Dilario	5	2275
Adelaide Wind Farm	6	Subset	11	10	2016	11:55	12:25	30	1	Dan Dilario	5	1075
Adelaide Wind Farm	11	Subset	11	10	2016	12:30	13:00	30	1	Dan Dilario	5	7500
Adelaide Wind Farm	27	Subset	11	10	2016	13:10	13:40	30	1	Dan Dilario	5	4125
Adelaide Wind Farm	22	Subset	11	10	2016	13:45	14:15	30	1	Dan Dilario	5	8050
Adelaide Wind Farm	20	Subset	11	10	2016	14:20	14:50	30	1	Dan Dilario	5	6980
Adelaide Wind Farm	12	Subset	11	10	2016	14:55	15:25	30	1	Dan Dilario	5	7100
Adelaide Wind Farm	14	Subset	11	10	2016	15:30	16:00	30	1	Dan Dilario	5	1125
Adelaide Wind Farm	17	Subset	11	10	2016	16:05	16:35	30	1	Dan Dilario	5	3100
Adelaide Wind Farm	19	Subset	11	10	2016	16:40	17:10	30	1	Dan Dilario	5	1575
Adelaide Wind Farm	7	Subset	13	10	2016	11:15	11:45	30	1	Dan Dilario	2	3850
Adelaide Wind Farm	6	Subset	13	10	2016	11:50	12:20	30	1	Dan Dilario	2	1100
Adelaide Wind Farm	11	Subset	13	10	2016	12:25	12:55	30	1	Dan Dilario	2	8165
Adelaide Wind Farm	20	Subset	13	10	2016	13:00	13:30	30	1	Dan Dilario	2	7075
Adelaide Wind Farm	22	Subset	13	10	2016	13:35	14:05	30	1	Dan Dilario	2	8200
Adelaide Wind Farm	27	Subset	13	10	2016	14:10	14:40	30	1	Dan Dilario	2	5840
Adelaide Wind Farm	12	Subset	13	10	2016	14:45	15:15	30	1	Dan Dilario	2	7300
Adelaide Wind Farm	14	Subset	13	10	2016	15:20	15:50	30	1	Dan Dilario	2	1180
Adelaide Wind Farm	17	Subset	13	10	2016	15:55	16:25	30	1	Dan Dilario	2	3750
Adelaide Wind Farm	19	Subset	13	10	2016	16:30	17:00	30	1	Dan Dilario	2	1740
Adelaide Wind Farm	20	Subset	17	10	2016	12:30	13:00	30	1	Dan Dilario	4	7800
Adelaide Wind Farm	22	Subset	17	10	2016	13:05	13:35	30	1	Dan Dilario	4	7925
Adelaide Wind Farm	27	Subset	17	10	2016	13:40	14:10	30	1	Dan Dilario	4	7300
Adelaide Wind Farm	19	Subset	17	10	2016	14:15	14:45	30	1	Dan Dilario	4	1740
Adelaide Wind Farm	17	Subset	17	10	2016	14:50	15:20	30	1	Dan Dilario	4	3300
Adelaide Wind Farm	14	Subset	17	10	2016	15:25	15:55	30	1	Dan Dilario	4	4175
Adelaide Wind Farm	12	Subset	17	10	2016	16:00	16:30	30	1	Dan Dilario	4	5875
Adelaide Wind Farm	11	Subset	17	10	2016	16:35	17:05	30	1	Dan Dilario	4	7680
Adelaide Wind Farm	7	Subset	17	10	2016	17:10	17:40	30	1	Dan Dilario	4	4950
Adelaide Wind Farm	6	Subset	17	10	2016	17:45	18:15	30	1	Dan Dilario	4	1325
Adelaide Wind Farm	27	Subset	20	10	2016	11:15	11:45	30	1	Dan Dilario	3	7650
Adelaide Wind Farm	22	Subset	20	10	2016	11:50	12:20	30	1	Dan Dilario	3	7950
Adelaide Wind Farm	20	Subset	20	10	2016	12:25	12:55	30	1	Dan Dilario	3	7775
Adelaide Wind Farm	19	Subset	20	10	2016	13:00	13:30	30	1	Dan Dilario	3	1875
Adelaide Wind Farm	17	Subset	20	10	2016	13:35	14:05	30	1	Dan Dilario	3	3300
Adelaide Wind Farm	14	Subset	20	10	2016	14:10	14:40	30	1	Dan Dilario	3	4475
Adelaide Wind Farm	12	Subset	20	10	2016	14:45	15:15	30	1	Dan Dilario	3	6925
Adelaide Wind Farm	11	Subset	20	10	2016	15:20	15:50	30	1	Dan Dilario	3	7900
Adelaide Wind Farm	7	Subset	20	10	2016	15:55	16:25	30	1	Dan Dilario	3	5200
Adelaide Wind Farm	6	Subset	20	10	2016	16:30	17:00	30	1	Dan Dilario	3	1375
Adelaide Wind Farm	27	Subset	24	10	2016	10:15	10:45	30	1	Dan Dilario	4	7550
Adelaide Wind Farm	22	Subset	24	10	2016	10:50	11:20	30	1	Dan Dilario	4	7925
Adelaide Wind Farm	20	Subset	24	10	2016	11:25	11:55	30	1	Dan Dilario	4	7656

Appendix F1: Weekly Mortality Monitoring Survey Record

project_name	turbine_number	dog_used	search_area_shape	search_area_dimension	transect_separation_m	temp_celsius	wind_speed	wind_direction	precipitation	cloud_cover_percent	signif_weather	comments
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	20	10	NW	Rain	22	Light Rain	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	20	10	NW	Rain	22	Light Rain	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	20	10	NW	Rain	22	Light Rain	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	22	10	S	None	17	None	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	22	10	S	None	17	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	22	10	S	None	17	None	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	22	10	S	None	17	None	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	22	10	S	None	17	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	22	10	S	None	17	None	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	22	10	S	None	17	None	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	22	10	S	None	17	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	22	10	S	None	17	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	22	10	S	None	17	None	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	17	14	S	None	0	None	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	17	14	S	None	0	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	17	14	S	None	0	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	17	14	S	None	0	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	17	14	S	None	0	None	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	17	14	S	None	0	None	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	17	14	S	None	0	None	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	17	14	S	None	0	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	17	14	S	None	0	None	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	17	14	S	None	0	None	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	11	19	NW	None	32	None	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	11	19	NW	None	32	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	11	19	NW	None	32	None	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	11	19	NW	None	32	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	11	19	NW	None	32	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	11	19	NW	None	32	None	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	11	19	NW	None	32	None	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	11	19	NW	None	32	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	11	19	NW	None	32	None	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	11	19	NW	None	32	None	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	22	19	SW	None	32	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	22	19	SW	None	32	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	22	19	SW	None	32	None	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	22	19	SW	None	32	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	22	19	SW	None	32	None	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	22	19	SW	None	32	None	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	22	19	SW	None	32	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	22	19	SW	None	32	None	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	22	19	SW	None	32	None	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	22	19	SW	None	32	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	13	6	NE	Heavy Rain	62	Heavy Rain	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	13	6	NE	Heavy Rain	62	Heavy Rain	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	13	6	NE	Heavy Rain	62	Heavy Rain	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	13	6	NE	Heavy Rain	62	Heavy Rain	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	13	6	NE	Heavy Rain	62	Heavy Rain	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	13	6	NE	Heavy Rain	62	Heavy Rain	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	13	6	NE	Heavy Rain	62	Heavy Rain	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	13	6	NE	Heavy Rain	62	Heavy Rain	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	13	6	NE	Heavy Rain	62	Heavy Rain	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	13	6	NE	Heavy Rain	62	Heavy Rain	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	9	23	NW	Heavy Rain	41	Rain	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	9	23	NW	Heavy Rain	41	Rain	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	9	23	NW	Heavy Rain	41	Rain	

Appendix F1: Weekly Mortality Monitoring Survey Record

project_name	turbine_number	treatment_group	day	month	year	start_time	end_time	duration_min	number_of_searchers	searchers_names	days_since_last_search	actual_area_searched_m2
Adelaide Wind Farm	19	Subset	24	10	2016	12:00	12:30	30	1	Dan Dilario	4	1725
Adelaide Wind Farm	17	Subset	24	10	2016	12:35	13:05	30	1	Dan Dilario	4	3750
Adelaide Wind Farm	14	Subset	24	10	2016	13:10	13:40	30	1	Dan Dilario	4	3865
Adelaide Wind Farm	12	Subset	24	10	2016	13:45	14:15	30	1	Dan Dilario	4	7100
Adelaide Wind Farm	11	Subset	24	10	2016	14:20	14:50	30	1	Dan Dilario	4	7735
Adelaide Wind Farm	7	Subset	24	10	2016	14:55	15:25	30	1	Dan Dilario	4	5160
Adelaide Wind Farm	6	Subset	24	10	2016	15:30	16:00	30	1	Dan Dilario	4	1840
Adelaide Wind Farm	7	Subset	27	10	2016	11:00	11:30	30	1	Dan Dilario	3	6200
Adelaide Wind Farm	6	Subset	27	10	2016	11:35	12:05	30	1	Dan Dilario	3	2175
Adelaide Wind Farm	11	Subset	27	10	2016	12:10	12:40	30	1	Dan Dilario	3	7358
Adelaide Wind Farm	12	Subset	27	10	2016	12:45	13:15	30	1	Dan Dilario	3	7675
Adelaide Wind Farm	14	Subset	27	10	2016	13:20	13:50	30	1	Dan Dilario	3	3900
Adelaide Wind Farm	17	Subset	27	10	2016	13:55	14:25	30	1	Dan Dilario	3	4180
Adelaide Wind Farm	19	Subset	27	10	2016	14:30	15:00	30	1	Dan Dilario	3	1865
Adelaide Wind Farm	22	Subset	27	10	2016	15:05	15:35	30	1	Dan Dilario	3	806
Adelaide Wind Farm	27	Subset	27	10	2016	15:40	16:10	30	1	Dan Dilario	3	7825

Appendix F1: Weekly Mortality Monitoring Survey Record

project_name	turbine_number	dog_used	search_area_shape	search_area_dimension	transect_separation_m	temp_celsius	wind_speed	wind_direction	precipitation	cloud_cover_percent	signif_weather	comments
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	9	23	NW	Heavy Rain	41	Rain	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	9	23	NW	Heavy Rain	41	Rain	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	9	23	NW	Heavy Rain	41	Rain	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	9	23	NW	Heavy Rain	41	Rain	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	9	23	NW	Heavy Rain	41	Rain	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	9	23	NW	Heavy Rain	41	Rain	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	9	23	NW	Heavy Rain	41	Rain	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	4	10	NE	Heavy Rain	70	Heavy Rain	
Adelaide Wind Farm	6	no	circular	50m radius, 100m by 100m	5-6m	4	10	NE	Heavy Rain	70	Heavy Rain	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	4	10	NE	Heavy Rain	70	Heavy Rain	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	4	10	NE	Heavy Rain	70	Heavy Rain	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	4	10	NE	Heavy Rain	70	Heavy Rain	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	4	10	NE	Heavy Rain	70	Heavy Rain	
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m	5-6m	4	10	NE	Heavy Rain	70	Heavy Rain	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	4	10	NE	Heavy Rain	70	Heavy Rain	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	4	10	NE	Heavy Rain	70	Heavy Rain	

Appendix F2: Raptor Mortality Monitoring Survey Record

project_name	turbine_number	treatment_group	day	month	year	start_time	end_time	duration_min	number_of_searchers	searchers_names	days_since_last_search	actual_area_searched_m2	dog_used
Adelaide Wind Farm	8	SAR Survey	4	5	2016	8:55	9:25	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	9	SAR Survey	4	5	2016	9:30	10:00	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	15	SAR Survey	4	5	2016	11:00	11:30	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	13	SAR Survey	4	5	2016	11:35	12:05	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	18	SAR Survey	4	5	2016	12:10	12:40	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	21	SAR Survey	4	5	2016	12:45	13:15	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	26	SAR Survey	4	5	2016	13:20	13:55	35	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	5	SAR Survey	4	5	2016	14:10	14:45	35	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	5	Raptor Blitz	18	5	2016	9:55	10:10	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	8	Raptor Blitz	18	5	2016	10:15	10:30	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	9	Raptor Blitz	18	5	2016	10:35	10:50	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	13	Raptor Blitz	18	5	2016	11:00	11:20	20	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	15	Raptor Blitz	18	5	2016	11:25	11:40	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	18	Raptor Blitz	18	5	2016	11:55	12:10	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	21	Raptor Blitz	18	5	2016	12:25	12:40	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	26	Raptor Blitz	18	5	2016	12:50	13:05	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	5	SAR Survey	1	6	2016	10:15	10:45	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	8	SAR Survey	1	6	2016	10:50	11:20	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	9	SAR Survey	1	6	2016	11:20	11:50	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	13	SAR Survey	1	6	2016	11:55	12:25	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	15	SAR Survey	1	6	2016	12:30	13:00	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	18	SAR Survey	1	6	2016	13:00	13:30	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	21	SAR Survey	1	6	2016	13:35	14:05	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	26	SAR Survey	1	6	2016	14:10	14:45	35	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	5	Raptor Blitz	8	6	2016	11:00	11:15	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	8	Raptor Blitz	8	6	2016	11:20	11:30	10	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	9	Raptor Blitz	8	6	2016	11:35	11:50	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	13	Raptor Blitz	8	6	2016	11:55	12:05	10	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	15	Raptor Blitz	8	6	2016	12:10	12:20	10	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	18	Raptor Blitz	8	6	2016	12:25	12:40	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	21	Raptor Blitz	8	6	2016	12:45	13:00	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	5	SAR Survey	15	6	2016	10:55	11:25	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	8	SAR Survey	15	6	2016	11:30	12:05	35	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	9	SAR Survey	15	6	2016	12:10	12:40	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	13	SAR Survey	15	6	2016	12:45	13:15	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	15	SAR Survey	15	6	2016	13:15	13:45	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	18	SAR Survey	15	6	2016	13:50	14:20	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	21	SAR Survey	15	6	2016	14:25	14:55	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	5	Raptor Blitz	22	6	2016	11:00	11:15	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	8	Raptor Blitz	22	6	2016	11:20	11:40	20	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	9	Raptor Blitz	22	6	2016	11:45	12:00	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	13	Raptor Blitz	22	6	2016	12:05	12:25	20	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	18	Raptor Blitz	22	6	2016	12:30	12:50	20	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	21	Raptor Blitz	22	6	2016	13:00	13:20	20	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	21	Raptor Blitz	27	6	2016	8:54	9:04	10	1	Brennan Obermayer	n/a	n/a	No
Adelaide Wind Farm	18	Raptor Blitz	27	6	2016	9:14	9:21	7	1	Brennan Obermayer	n/a	n/a	No
Adelaide Wind Farm	15	Raptor Blitz	27	6	2016	9:28	9:39	11	1	Brennan Obermayer	n/a	n/a	No
Adelaide Wind Farm	13	Raptor Blitz	27	6	2016	9:44	9:50	6	1	Brennan Obermayer	n/a	n/a	No
Adelaide Wind Farm	9	Raptor Blitz	27	6	2016	12:12	12:18	6	1	Brennan Obermayer	n/a	n/a	No
Adelaide Wind Farm	8	Raptor Blitz	27	6	2016	12:28	12:34	6	1	Brennan Obermayer	n/a	n/a	No
Adelaide Wind Farm	5	Raptor Blitz	27	6	2016	12:45	12:51	6	1	Brennan Obermayer	n/a	n/a	No
Adelaide Wind Farm	5	Raptor Blitz	6	7	2016	11:35	11:50	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	8	Raptor Blitz	6	7	2016	11:55	12:10	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	9	Raptor Blitz	6	7	2016	12:15	12:30	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	13	Raptor Blitz	6	7	2016	12:35	12:50	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	15	Raptor Blitz	6	7	2016	12:55	13:10	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	18	Raptor Blitz	6	7	2016	13:15	13:30	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	21	Raptor Blitz	6	7	2016	13:35	13:50	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	26	Raptor Blitz	6	7	2016	13:55	14:10	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	5	Raptor Blitz	13	7	2016	11:45	12:00	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	8	Raptor Blitz	13	7	2016	12:05	12:15	10	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	9	Raptor Blitz	13	7	2016	12:20	12:35	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	13	Raptor Blitz	13	7	2016	12:40	12:55	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	15	Raptor Blitz	13	7	2016	13:00	13:10	10	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	18	Raptor Blitz	13	7	2016	13:20	13:35	15	1	Nash Colville	n/a	n/a	No

Appendix F2: Raptor Mortality Monitoring Survey Record

project_name	turbine_number	search_area_shape	search_area_dimension	transect_separation_m	temp_celsius	wind_speed	wind_direction	precipitation	cloud_cover_percent	signif_weather	comments
Adelaide Wind Farm	8	circular	50m radius	5-6m	14	22	SE	None	Clear	Drizzle	
Adelaide Wind Farm	9	circular	50m radius	5-6m	14	22	SE	None	Clear	Drizzle	
Adelaide Wind Farm	15	circular	50m radius	5-6m	14	22	SE	None	Clear	Drizzle	
Adelaide Wind Farm	13	circular	50m radius	5-6m	14	22	SE	None	Clear	Drizzle	
Adelaide Wind Farm	18	circular	50m radius	5-6m	14	22	SE	None	Clear	Drizzle	
Adelaide Wind Farm	21	circular	50m radius	5-6m	14	22	SE	None	Clear	Drizzle	
Adelaide Wind Farm	26	circular	50m radius	5-6m	14	22	SE	None	Clear	Drizzle	
Adelaide Wind Farm	5	circular	50m radius	5-6m	14	22	SE	None	Clear	Drizzle	
Adelaide Wind Farm	5	Circular	50 m radius	5-6 m	20	13	W	None	15	None	
Adelaide Wind Farm	8	Circular	50 m radius	5-6 m	20	13	W	None	15	None	
Adelaide Wind Farm	9	Circular	50 m radius	5-6 m	20	13	W	None	15	None	
Adelaide Wind Farm	13	Circular	50 m radius	5-6 m	20	13	W	None	15	None	
Adelaide Wind Farm	15	Circular	50 m radius	5-6 m	20	13	W	None	15	None	
Adelaide Wind Farm	18	Circular	50 m radius	5-6 m	20	13	W	None	15	None	
Adelaide Wind Farm	21	Circular	50 m radius	5-6 m	20	13	W	None	15	None	
Adelaide Wind Farm	26	Circular	50 m radius	5-6 m	20	13	W	None	15	None	
Adelaide Wind Farm	5	circular	50m radius	5-6m	25	17	SE	None	5	None	
Adelaide Wind Farm	8	circular	50m radius	5-6m	25	17	SE	None	5	None	
Adelaide Wind Farm	9	circular	50m radius	5-6m	25	17	SE	None	5	None	
Adelaide Wind Farm	13	circular	50m radius	5-6m	25	17	SE	None	5	None	
Adelaide Wind Farm	15	circular	50m radius	5-6m	25	17	SE	None	5	None	
Adelaide Wind Farm	18	circular	50m radius	5-6m	25	17	SE	None	5	None	
Adelaide Wind Farm	21	circular	50m radius	5-6m	25	17	SE	None	5	None	
Adelaide Wind Farm	26	circular	50m radius	5-6m	25	17	SE	None	5	None	
Adelaide Wind Farm	5	Circular	50 m radius	5-6 m	14	24	SE	Drizzle	Overcast	Light Rain	
Adelaide Wind Farm	8	Circular	50 m radius	5-6 m	14	24	SE	Drizzle	Overcast	Light Rain	
Adelaide Wind Farm	9	Circular	50 m radius	5-6 m	14	24	SE	Drizzle	Overcast	Light Rain	
Adelaide Wind Farm	13	Circular	50 m radius	5-6 m	14	24	SE	Drizzle	Overcast	Light Rain	
Adelaide Wind Farm	15	Circular	50 m radius	5-6 m	14	24	SE	Drizzle	Overcast	Light Rain	
Adelaide Wind Farm	18	Circular	50 m radius	5-6 m	14	24	SE	Drizzle	Overcast	Light Rain	
Adelaide Wind Farm	21	Circular	50 m radius	5-6 m	14	24	SE	Drizzle	Overcast	Light Rain	
Adelaide Wind Farm	5	circular	50m radius	5-6m	21	13	S	Rain	20	Light Rain	
Adelaide Wind Farm	8	circular	50m radius	5-6m	21	13	S	Rain	20	Light Rain	
Adelaide Wind Farm	9	circular	50m radius	5-6m	21	13	S	Rain	20	Light Rain	
Adelaide Wind Farm	13	circular	50m radius	5-6m	21	13	S	Rain	20	Light Rain	
Adelaide Wind Farm	15	circular	50m radius	5-6m	21	13	S	Rain	20	Light Rain	
Adelaide Wind Farm	18	circular	50m radius	5-6m	21	13	S	Rain	20	Light Rain	
Adelaide Wind Farm	21	circular	50m radius	5-6m	21	13	S	Rain	20	Light Rain	
Adelaide Wind Farm	5	Circular	50 m radius	5-6 m	24	19	N	None	5	None	
Adelaide Wind Farm	8	Circular	50 m radius	5-6 m	24	19	N	None	5	None	
Adelaide Wind Farm	9	Circular	50 m radius	5-6 m	24	19	N	None	5	None	
Adelaide Wind Farm	13	Circular	50 m radius	5-6 m	24	19	N	None	5	None	
Adelaide Wind Farm	18	Circular	50 m radius	5-6 m	24	19	N	None	5	None	
Adelaide Wind Farm	21	Circular	50 m radius	5-6 m	24	19	N	None	5	None	
Adelaide Wind Farm	21	Circular	50 m radius	5-6 m	28-30	5-10	W	None	15	Rain	
Adelaide Wind Farm	18	Circular	50 m radius	5-6 m	28-30	5-10	W	None	15	Rain	
Adelaide Wind Farm	15	Circular	50 m radius	5-6 m	28-30	5-10	W	None	15	Rain	
Adelaide Wind Farm	13	Circular	50 m radius	5-6 m	28-30	5-10	W	None	15	Rain	
Adelaide Wind Farm	9	Circular	50 m radius	5-6 m	28-30	5-10	W	None	15	Rain	
Adelaide Wind Farm	8	Circular	50 m radius	5-6 m	28-30	5-10	W	None	15	Rain	
Adelaide Wind Farm	5	Circular	50 m radius	5-6 m	28-30	5-10	W	None	15	Rain	
Adelaide Wind Farm	5	Circular	50 m radius	5-6 m	28	16	S	None	15	None	
Adelaide Wind Farm	8	Circular	50 m radius	5-6 m	28	16	S	None	15	None	
Adelaide Wind Farm	9	Circular	50 m radius	5-6 m	28	16	S	None	15	None	
Adelaide Wind Farm	13	Circular	50 m radius	5-6 m	28	16	S	None	15	None	
Adelaide Wind Farm	15	Circular	50 m radius	5-6 m	28	16	S	None	15	None	
Adelaide Wind Farm	18	Circular	50 m radius	5-6 m	28	16	S	None	15	None	
Adelaide Wind Farm	21	Circular	50 m radius	5-6 m	28	16	S	None	15	None	
Adelaide Wind Farm	26	Circular	50 m radius	5-6 m	28	16	S	None	15	None	
Adelaide Wind Farm	5	Circular	50 m radius	5-6 m	29	6	NW	None	20	None	
Adelaide Wind Farm	8	Circular	50 m radius	5-6 m	29	6	NW	None	20	None	
Adelaide Wind Farm	9	Circular	50 m radius	5-6 m	29	6	NW	None	20	None	
Adelaide Wind Farm	13	Circular	50 m radius	5-6 m	29	6	NW	None	20	None	
Adelaide Wind Farm	15	Circular	50 m radius	5-6 m	29	6	NW	None	20	None	
Adelaide Wind Farm	18	Circular	50 m radius	5-6 m	29	6	NW	None	20	None	

Appendix F2: Raptor Mortality Monitoring Survey Record

project_name	turbine_number	treatment_group	day	month	year	start_time	end_time	duration_min	number_of_searchers	searchers_names	days_since_last_search	actual_area_searched_m2	dog_used
Adelaide Wind Farm	26	Raptor Blitz	13	7	2016	14:00	14:20	20	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	5	Raptor Blitz	19	7	2016	11:20	11:35	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	8	Raptor Blitz	19	7	2016	11:40	11:50	10	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	9	Raptor Blitz	19	7	2016	11:55	12:05	10	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	13	Raptor Blitz	19	7	2016	12:10	12:25	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	15	Raptor Blitz	19	7	2016	12:30	12:45	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	18	Raptor Blitz	19	7	2016	12:50	13:05	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	21	Raptor Blitz	19	7	2016	13:10	13:25	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	26	Raptor Blitz	19	7	2016	13:30	13:45	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	5	SAR Survey	27	7	2016	10:30	11:00	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	8	SAR Survey	27	7	2016	11:05	11:35	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	9	SAR Survey	27	7	2016	11:40	12:15	35	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	13	SAR Survey	27	7	2016	12:20	12:50	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	15	SAR Survey	27	7	2016	12:55	13:25	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	21	SAR Survey	29	7	2016	10:30	11:08	38	1	Melissa Straus	n/a	7854	no
Adelaide Wind Farm	18	SAR Survey	2	8	2016	14:25	14:55	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	26	SAR Survey	2	8	2016	16:10	16:40	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	5	SAR Survey	24	8	2016	10:50	11:20	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	8	SAR Survey	24	8	2016	11:25	11:55	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	9	SAR Survey	24	8	2016	12:00	12:30	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	13	SAR Survey	24	8	2016	12:35	13:05	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	15	SAR Survey	24	8	2016	13:10	13:40	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	18	SAR Survey	24	8	2016	13:45	14:15	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	21	SAR Survey	24	8	2016	14:20	14:50	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	26	SAR Survey	24	8	2016	14:55	15:25	30	1	Nash Colville	n/a	7854	no
Adelaide Wind Farm	5	SAR Survey	28	9	2016	11:00	11:45	45	1	Dan Dilario	n/a	7900	no
Adelaide Wind Farm	8	SAR Survey	28	9	2016	11:50	12:45	55	1	Dan Dilario	n/a	7980	no
Adelaide Wind Farm	9	SAR Survey	28	9	2016	12:50	13:30	40	1	Dan Dilario	n/a	8175	no
Adelaide Wind Farm	13	SAR Survey	28	9	2016	13:35	14:20	45	1	Dan Dilario	n/a	8050	no
Adelaide Wind Farm	15	SAR Survey	28	9	2016	15:40	16:15	35	1	Dan Dilario	n/a	7875	no
Adelaide Wind Farm	18	SAR Survey	28	9	2016	16:20	17:00	40	1	Dan Dilario	n/a	7975	no
Adelaide Wind Farm	21	SAR Survey	28	9	2016	17:05	17:35	30	1	Dan Dilario	n/a	8030	no
Adelaide Wind Farm	26	SAR Survey	28	9	2016	17:40	18:20	40	1	Dan Dilario	n/a	8240	no
Adelaide Wind Farm	5	SAR Survey	26	10	2016	12:30	13:10	40	1	Dan Dilario	n/a	7900	no
Adelaide Wind Farm	8	SAR Survey	26	10	2016	13:15	13:45	30	1	Dan Dilario	n/a	7980	no
Adelaide Wind Farm	9	SAR Survey	26	10	2016	13:50	14:20	30	1	Dan Dilario	n/a	8175	no
Adelaide Wind Farm	13	SAR Survey	26	10	2016	14:25	15:00	35	1	Dan Dilario	n/a	8050	no
Adelaide Wind Farm	15	SAR Survey	26	10	2016	15:05	15:35	30	1	Dan Dilario	n/a	8020	no
Adelaide Wind Farm	18	SAR Survey	26	10	2016	15:40	16:20	40	1	Dan Dilario	n/a	7875	no
Adelaide Wind Farm	21	SAR Survey	26	10	2016	16:25	17:00	35	1	Dan Dilario	n/a	7960	no
Adelaide Wind Farm	26	SAR Survey	26	10	2016	17:05	17:45	40	1	Dan Dilario	n/a	8215	no
Adelaide Wind Farm	27	Raptor Blitz	1	11	2016	10:00	10:20	20	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	22	Raptor Blitz	1	11	2016	10:25	10:55	30	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	20	Raptor Blitz	1	11	2016	11:00	11:15	15	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	19	Raptor Blitz	1	11	2016	11:20	11:45	25	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	17	Raptor Blitz	1	11	2016	11:50	12:10	20	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	14	Raptor Blitz	1	11	2016	12:15	12:45	30	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	12	Raptor Blitz	1	11	2016	12:50	13:10	20	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	11	Raptor Blitz	1	11	2016	13:15	13:35	20	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	6	Raptor Blitz	1	11	2016	13:40	14:00	20	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	7	Raptor Blitz	1	11	2016	14:05	14:30	25	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	7	Raptor Blitz	8	11	2016	9:30	9:50	20	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	6	Raptor Blitz	8	11	2016	9:55	10:20	25	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	11	Raptor Blitz	8	11	2016	10:25	10:50	25	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	12	Raptor Blitz	8	11	2016	10:55	11:20	25	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	14	Raptor Blitz	8	11	2016	11:25	11:55	30	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	17	Raptor Blitz	8	11	2016	12:00	12:20	20	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	19	Raptor Blitz	8	11	2016	12:25	12:50	25	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	20	Raptor Blitz	8	11	2016	12:55	13:20	25	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	22	Raptor Blitz	8	11	2016	13:25	13:50	25	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	27	Raptor Blitz	8	11	2016	13:55	14:10	15	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	7	Raptor Blitz	15	11	2016	12:00	12:20	20	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	6	Raptor Blitz	15	11	2016	12:25	12:40	15	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	11	Raptor Blitz	15	11	2016	12:45	13:00	15	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	12	Raptor Blitz	15	11	2016	13:05	13:25	20	1	Dan Dilario	n/a	n/a	No

Appendix F2: Raptor Mortality Monitoring Survey Record

project_name	turbine_number	search_area_shape	search_area_dimension	transect_separation_m	temp_celsius	wind_speed	wind_direction	precipitation	cloud_cover_percent	signif_weather	comments
Adelaide Wind Farm	26	Circular	50 m radius	5-6 m	29	6	NW	None	20	None	
Adelaide Wind Farm	5	Circular	50 m radius	5-6 m	26	23	NW	None	15	None	
Adelaide Wind Farm	8	Circular	50 m radius	5-6 m	26	23	NW	None	15	None	
Adelaide Wind Farm	9	Circular	50 m radius	5-6 m	26	23	NW	None	15	None	
Adelaide Wind Farm	13	Circular	50 m radius	5-6 m	26	23	NW	None	15	None	
Adelaide Wind Farm	15	Circular	50 m radius	5-6 m	26	23	NW	None	15	None	
Adelaide Wind Farm	18	Circular	50 m radius	5-6 m	26	23	NW	None	15	None	
Adelaide Wind Farm	21	Circular	50 m radius	5-6 m	26	23	NW	None	15	None	
Adelaide Wind Farm	26	Circular	50 m radius	5-6 m	26	23	NW	None	15	None	
Adelaide Wind Farm	5	circular	50m radius	5-6m	31	15	W	None	10	None	
Adelaide Wind Farm	8	circular	50m radius	5-6m	31	15	W	None	10	None	
Adelaide Wind Farm	9	circular	50m radius	5-6m	31	15	W	None	10	None	
Adelaide Wind Farm	13	circular	50m radius	5-6m	31	15	W	None	10	None	
Adelaide Wind Farm	15	circular	50m radius	5-6m	31	15	W	None	10	None	
Adelaide Wind Farm	21	circular	50m radius	5-6m	25	9	NE	None	50	None	
Adelaide Wind Farm	18	circular	50m radius	5-6m	30	27	S	None	15	Rain	
Adelaide Wind Farm	26	circular	50m radius	5-6m	30	27	S	None	15	Rain	
Adelaide Wind Farm	5	circular	50m radius	5-6m	27	26	NW	None	15	None	
Adelaide Wind Farm	8	circular	50m radius	5-6m	27	26	NW	None	15	None	
Adelaide Wind Farm	9	circular	50m radius	5-6m	27	26	NW	None	15	None	
Adelaide Wind Farm	13	circular	50m radius	5-6m	27	26	NW	None	15	None	
Adelaide Wind Farm	15	circular	50m radius	5-6m	27	26	NW	None	15	None	
Adelaide Wind Farm	18	circular	50m radius	5-6m	27	26	NW	None	15	None	
Adelaide Wind Farm	21	circular	50m radius	5-6m	27	26	NW	None	15	None	
Adelaide Wind Farm	26	circular	50m radius	5-6m	27	26	NW	None	15	None	
Adelaide Wind Farm	5	circular	50m radius	5-6m	22	18	E	Heavy Rain	40	Heavy Rain	
Adelaide Wind Farm	8	circular	50m radius	5-6m	22	18	E	Heavy Rain	40	Heavy Rain	
Adelaide Wind Farm	9	circular	50m radius	5-6m	22	18	E	Heavy Rain	40	Heavy Rain	
Adelaide Wind Farm	13	circular	50m radius	5-6m	22	18	E	Heavy Rain	40	Heavy Rain	Lightning delay after search
Adelaide Wind Farm	15	circular	50m radius	5-6m	22	18	E	Heavy Rain	40	Heavy Rain	
Adelaide Wind Farm	18	circular	50m radius	5-6m	22	18	E	Heavy Rain	40	Heavy Rain	
Adelaide Wind Farm	21	circular	50m radius	5-6m	22	18	E	Heavy Rain	40	Heavy Rain	
Adelaide Wind Farm	26	circular	50m radius	5-6m	22	18	E	Heavy Rain	40	Heavy Rain	
Adelaide Wind Farm	5	circular	50m radius	5-6m	5	14	E	Heavy Rain	90	Heavy Rain	
Adelaide Wind Farm	8	circular	50m radius	5-6m	5	14	E	Heavy Rain	90	Heavy Rain	
Adelaide Wind Farm	9	circular	50m radius	5-6m	5	14	E	Heavy Rain	90	Heavy Rain	
Adelaide Wind Farm	13	circular	50m radius	5-6m	5	14	E	Heavy Rain	90	Heavy Rain	
Adelaide Wind Farm	15	circular	50m radius	5-6m	5	14	E	Heavy Rain	90	Heavy Rain	
Adelaide Wind Farm	18	circular	50m radius	5-6m	5	14	E	Heavy Rain	90	Heavy Rain	
Adelaide Wind Farm	21	circular	50m radius	5-6m	5	14	E	Heavy Rain	90	Heavy Rain	
Adelaide Wind Farm	26	circular	50m radius	5-6m	5	14	E	Heavy Rain	90	Heavy Rain	
Adelaide Wind Farm	27	Circular	50 m radius	5-6 m	16	23	S	None	22	None	
Adelaide Wind Farm	22	Circular	50 m radius	5-6 m	16	23	S	None	22	None	
Adelaide Wind Farm	20	Circular	50 m radius	5-6 m	16	23	S	None	22	None	
Adelaide Wind Farm	19	Circular	50 m radius	5-6 m	16	23	S	None	22	None	
Adelaide Wind Farm	17	Circular	50 m radius	5-6 m	16	23	S	None	22	None	
Adelaide Wind Farm	14	Circular	50 m radius	5-6 m	16	23	S	None	22	None	
Adelaide Wind Farm	12	Circular	50 m radius	5-6 m	16	23	S	None	22	None	
Adelaide Wind Farm	11	Circular	50 m radius	5-6 m	16	23	S	None	22	None	
Adelaide Wind Farm	6	Circular	50 m radius	5-6 m	16	23	S	None	22	None	
Adelaide Wind Farm	7	Circular	50 m radius	5-6 m	16	23	S	None	22	None	
Adelaide Wind Farm	7	Circular	50 m radius	5-6 m	14	16	SW	Heavy Rain	60	Heavy Rain	
Adelaide Wind Farm	6	Circular	50 m radius	5-6 m	14	16	SW	Heavy Rain	60	Heavy Rain	
Adelaide Wind Farm	11	Circular	50 m radius	5-6 m	14	16	SW	Heavy Rain	60	Heavy Rain	
Adelaide Wind Farm	12	Circular	50 m radius	5-6 m	14	16	SW	Heavy Rain	60	Heavy Rain	
Adelaide Wind Farm	14	Circular	50 m radius	5-6 m	14	16	SW	Heavy Rain	60	Heavy Rain	
Adelaide Wind Farm	17	Circular	50 m radius	5-6 m	14	16	SW	Heavy Rain	60	Heavy Rain	
Adelaide Wind Farm	19	Circular	50 m radius	5-6 m	14	16	SW	Heavy Rain	60	Heavy Rain	
Adelaide Wind Farm	20	Circular	50 m radius	5-6 m	14	16	SW	Heavy Rain	60	Heavy Rain	
Adelaide Wind Farm	22	Circular	50 m radius	5-6 m	14	16	SW	Heavy Rain	60	Heavy Rain	
Adelaide Wind Farm	27	Circular	50 m radius	5-6 m	14	16	SW	Heavy Rain	60	Heavy Rain	
Adelaide Wind Farm	7	Circular	50 m radius	5-6 m	14	13	S	None	15	None	
Adelaide Wind Farm	6	Circular	50 m radius	5-6 m	14	13	S	None	15	None	
Adelaide Wind Farm	11	Circular	50 m radius	5-6 m	14	13	S	None	15	None	
Adelaide Wind Farm	12	Circular	50 m radius	5-6 m	14	13	S	None	15	None	

Appendix F2: Raptor Mortality Monitoring Survey Record

project_name	turbine_number	treatment_group	day	month	year	start_time	end_time	duration_min	number_of_searchers	searchers_names	days_since_last_search	actual_area_searched_m2	dog_used
Adelaide Wind Farm	14	Raptor Blitz	15	11	2016	13:30	13:50	20	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	17	Raptor Blitz	15	11	2016	13:55	14:15	20	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	19	Raptor Blitz	15	11	2016	14:20	14:45	25	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	20	Raptor Blitz	15	11	2016	14:50	15:15	25	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	22	Raptor Blitz	15	11	2016	15:20	15:45	25	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	27	Raptor Blitz	15	11	2016	15:50	16:15	25	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	27	SAR Survey	22	11	2016	8:30	8:55	25	1	Dan Dilario	n/a	7805	no
Adelaide Wind Farm	26	SAR Survey	22	11	2016	9:00	9:25	25	1	Dan Dilario	n/a	7875	no
Adelaide Wind Farm	22	SAR Survey	22	11	2016	9:30	9:45	15	1	Dan Dilario	n/a	8160	no
Adelaide Wind Farm	21	SAR Survey	22	11	2016	9:50	10:05	15	1	Dan Dilario	n/a	8105	no
Adelaide Wind Farm	20	SAR Survey	22	11	2016	10:10	10:25	15	1	Dan Dilario	n/a	7980	no
Adelaide Wind Farm	19	SAR Survey	22	11	2016	10:30	10:45	15	1	Dan Dilario	n/a	7770	no
Adelaide Wind Farm	18	SAR Survey	22	11	2016	10:50	11:15	25	1	Dan Dilario	n/a	7965	no
Adelaide Wind Farm	17	SAR Survey	22	11	2016	11:10	11:35	25	1	Dan Dilario	n/a	7455	no
Adelaide Wind Farm	15	SAR Survey	22	11	2016	11:40	12:00	20	1	Dan Dilario	n/a	8030	no
Adelaide Wind Farm	14	SAR Survey	22	11	2016	12:05	12:30	25	1	Dan Dilario	n/a	7735	no
Adelaide Wind Farm	13	SAR Survey	22	11	2016	12:35	12:55	20	1	Dan Dilario	n/a	7960	no
Adelaide Wind Farm	12	SAR Survey	22	11	2016	13:00	13:25	25	1	Dan Dilario	n/a	8180	no
Adelaide Wind Farm	11	SAR Survey	22	11	2016	13:30	13:55	25	1	Dan Dilario	n/a	7885	no
Adelaide Wind Farm	9	SAR Survey	22	11	2016	14:00	14:25	25	1	Dan Dilario	n/a	7780	no
Adelaide Wind Farm	8	SAR Survey	22	11	2016	14:30	14:55	25	1	Dan Dilario	n/a	6165	no
Adelaide Wind Farm	7	SAR Survey	22	11	2016	15:00	15:25	25	1	Dan Dilario	n/a	7745	no
Adelaide Wind Farm	6	SAR Survey	22	11	2016	15:30	15:55	25	1	Dan Dilario	n/a	8080	no
Adelaide Wind Farm	5	SAR Survey	22	11	2016	16:00	16:20	20	1	Dan Dilario	n/a	7975	no
Adelaide Wind Farm	27	Raptor Blitz	29	11	2016	10:00	10:20	20	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	22	Raptor Blitz	29	11	2016	10:25	10:40	15	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	20	Raptor Blitz	29	11	2016	10:45	11:10	25	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	19	Raptor Blitz	29	11	2016	11:15	11:40	25	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	17	Raptor Blitz	29	11	2016	11:45	12:05	20	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	14	Raptor Blitz	29	11	2016	12:10	12:45	35	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	12	Raptor Blitz	29	11	2016	12:50	13:05	15	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	11	Raptor Blitz	29	11	2016	13:10	13:15	5	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	6	Raptor Blitz	29	11	2016	13:20	13:35	15	1	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	7	Raptor Blitz	29	11	2016	13:40	13:55	15	1	Dan Dilario	n/a	n/a	No

Appendix F2: Raptor Mortality Monitoring Survey Record

project_name	turbine_number	search_area_shape	search_area_dimension	transect_separation_m	temp_celsius	wind_speed	wind_direction	precipitation	cloud_cover_percent	signif_weather	comments
Adelaide Wind Farm	14	Circular	50 m radius	5-6 m	14	13	S	None	15	None	
Adelaide Wind Farm	17	Circular	50 m radius	5-6 m	14	13	S	None	15	None	
Adelaide Wind Farm	19	Circular	50 m radius	5-6 m	14	13	S	None	15	None	
Adelaide Wind Farm	20	Circular	50 m radius	5-6 m	14	13	S	None	15	None	
Adelaide Wind Farm	22	Circular	50 m radius	5-6 m	14	13	S	None	15	None	
Adelaide Wind Farm	27	Circular	50 m radius	5-6 m	14	13	S	None	15	None	
Adelaide Wind Farm	27	circular	50m radius	5-6m	2	10	NW	None	20	None	
Adelaide Wind Farm	26	circular	50m radius	5-6m	2	10	NW	None	20	None	
Adelaide Wind Farm	22	circular	50m radius	5-6m	2	10	NW	None	20	None	
Adelaide Wind Farm	21	circular	50m radius	5-6m	2	10	NW	None	20	None	
Adelaide Wind Farm	20	circular	50m radius	5-6m	2	10	NW	None	20	None	
Adelaide Wind Farm	19	circular	50m radius	5-6m	2	10	NW	None	20	None	
Adelaide Wind Farm	18	circular	50m radius	5-6m	2	10	NW	None	20	None	
Adelaide Wind Farm	17	circular	50m radius	5-6m	2	10	NW	None	20	None	
Adelaide Wind Farm	15	circular	50m radius	5-6m	2	10	NW	None	20	None	
Adelaide Wind Farm	14	circular	50m radius	5-6m	2	10	NW	None	20	None	
Adelaide Wind Farm	13	circular	50m radius	5-6m	2	10	NW	None	20	None	
Adelaide Wind Farm	12	circular	50m radius	5-6m	2	10	NW	None	20	None	
Adelaide Wind Farm	11	circular	50m radius	5-6m	2	10	NW	None	20	None	
Adelaide Wind Farm	9	circular	50m radius	5-6m	2	10	NW	None	20	None	
Adelaide Wind Farm	8	circular	50m radius	5-6m	2	10	NW	None	20	None	
Adelaide Wind Farm	7	circular	50m radius	5-6m	2	10	NW	None	20	None	
Adelaide Wind Farm	6	circular	50m radius	5-6m	2	10	NW	None	20	None	
Adelaide Wind Farm	5	circular	50m radius	5-6m	2	10	NW	None	20	None	
Adelaide Wind Farm	27	Circular	50 m radius	5-6 m	13	19	SW	Rain	80	Rain	
Adelaide Wind Farm	22	Circular	50 m radius	5-6 m	13	19	SW	Rain	80	Rain	
Adelaide Wind Farm	20	Circular	50 m radius	5-6 m	13	19	SW	Rain	80	Rain	
Adelaide Wind Farm	19	Circular	50 m radius	5-6 m	13	19	SW	Rain	80	Rain	
Adelaide Wind Farm	17	Circular	50 m radius	5-6 m	13	19	SW	Rain	80	Rain	
Adelaide Wind Farm	14	Circular	50 m radius	5-6 m	13	19	SW	Rain	80	Rain	
Adelaide Wind Farm	12	Circular	50 m radius	5-6 m	13	19	SW	Rain	80	Rain	
Adelaide Wind Farm	11	Circular	50 m radius	5-6 m	13	19	SW	Rain	80	Rain	
Adelaide Wind Farm	6	Circular	50 m radius	5-6 m	13	19	SW	Rain	80	Rain	
Adelaide Wind Farm	7	Circular	50 m radius	5-6 m	13	19	SW	Rain	80	Rain	

Appendix F3: Missed Survey Weekly Monitoring Record

project_name	turbine_number	treatment_group	day	month	year	start_time	end_time	duration_min	number_of_searchers	searchers_names	days_since_last_search
Adelaide Wind Farm	14	Subset	24	5	2016	N/A	N/A	0	1	Nash Colville	5
Adelaide Wind Farm	6	Subset	2	6	2016	N/A	N/A	0	1	Nash Colville	3
Adelaide Wind Farm	12	Subset	2	6	2016	N/A	N/A	0	1	Nash Colville	3
Adelaide Wind Farm	19	Subset	6	6	2016	N/A	N/A	0	1	Nash Colville	4
Adelaide Wind Farm	14	Subset	9	6	2016	N/A	N/A	0	1	Nash Colville	3
Adelaide Wind Farm	27	Subset	13	6	2016	N/A	N/A	0	1	Nash Colville	4
Adelaide Wind Farm	6	Subset	16	6	2016	N/A	N/A	0	1	Nash Colville	3
Adelaide Wind Farm	7	Subset	16	6	2016	N/A	N/A	0	1	Nash Colville	3
Adelaide Wind Farm	11	Subset	16	6	2016	N/A	N/A	0	1	Nash Colville	3
Adelaide Wind Farm	12	Subset	16	6	2016	N/A	N/A	0	1	Nash Colville	3
Adelaide Wind Farm	14	Subset	16	6	2016	N/A	N/A	0	1	Nash Colville	3
Adelaide Wind Farm	17	Subset	16	6	2016	N/A	N/A	0	1	Nash Colville	3
Adelaide Wind Farm	19	Subset	16	6	2016	N/A	N/A	0	1	Nash Colville	3
Adelaide Wind Farm	20	Subset	16	6	2016	N/A	N/A	0	1	Nash Colville	3
Adelaide Wind Farm	22	Subset	16	6	2016	N/A	N/A	0	1	Nash Colville	7
Adelaide Wind Farm	27	Subset	16	6	2016	N/A	N/A	0	1	Nash Colville	3
Adelaide Wind Farm	27	Subset	20	6	2016	N/A	N/A	0	1	Nash Colville	11
Adelaide Wind Farm	7	Subset	29	6	2016	N/A	N/A	0	1	Nash Colville	2
Adelaide Wind Farm	7	Subset	7	7	2016	N/A	N/A	0	1	Nash Colville	3
Adelaide Wind Farm	20	Subset	11	7	2016	N/A	N/A	0	1	Nash Colville	4
Adelaide Wind Farm	22	Subset	11	7	2016	N/A	N/A	0	1	Nash Colville	4
Adelaide Wind Farm	14	Subset	14	7	2016	N/A	N/A	0	1	Nash Colville	3
Adelaide Wind Farm	17	Subset	14	7	2016	N/A	N/A	0	1	Nash Colville	3
Adelaide Wind Farm	19	Subset	14	7	2016	N/A	N/A	0	1	Nash Colville	3
Adelaide Wind Farm	20	Subset	14	7	2016	N/A	N/A	0	1	Nash Colville	7
Adelaide Wind Farm	22	Subset	14	7	2016	N/A	N/A	0	1	Nash Colville	7
Adelaide Wind Farm	27	Subset	14	7	2016	N/A	N/A	0	1	Nash Colville	3
Adelaide Wind Farm	7	Subset	18	7	2016	N/A	N/A	0	1	Nash Colville	4
Adelaide Wind Farm	19	Subset	26	7	2016	N/A	N/A	0	1	Nash Colville	5
Adelaide Wind Farm	27	Subset	26	7	2016	N/A	N/A	0	1	Nash Colville	5
Adelaide Wind Farm	17	Subset	2	8	2016	N/A	N/A	0	1	Nash Colville	4
Adelaide Wind Farm	27	Subset	2	8	2016	N/A	N/A	0	1	Nash Colville	4
Adelaide Wind Farm	19	Subset	4	8	2016	N/A	N/A	0	1	Nash Colville	2
Adelaide Wind Farm	20	Subset	4	8	2016	N/A	N/A	0	1	Nash Colville	2
Adelaide Wind Farm	19	Subset	8	8	2016	N/A	N/A	0	1	Nash Colville	6
Adelaide Wind Farm	6	Subset	11	8	2016	N/A	N/A	0	1	Nash Colville	3
Adelaide Wind Farm	7	Subset	11	8	2016	N/A	N/A	0	1	Nash Colville	3
Adelaide Wind Farm	11	Subset	11	8	2016	N/A	N/A	0	1	Nash Colville	3
Adelaide Wind Farm	12	Subset	11	8	2016	N/A	N/A	0	1	Nash Colville	3
Adelaide Wind Farm	14	Subset	11	8	2016	N/A	N/A	0	1	Nash Colville	3
Adelaide Wind Farm	17	Subset	11	8	2016	N/A	N/A	0	1	Nash Colville	3
Adelaide Wind Farm	19	Subset	11	8	2016	N/A	N/A	0	1	Nash Colville	9
Adelaide Wind Farm	20	Subset	11	8	2016	N/A	N/A	0	1	Nash Colville	3
Adelaide Wind Farm	22	Subset	11	8	2016	N/A	N/A	0	1	Nash Colville	3
Adelaide Wind Farm	27	Subset	11	8	2016	N/A	N/A	0	1	Nash Colville	3
Adelaide Wind Farm	12	Subset	18	8	2016	N/A	N/A	0	1	Nash Colville	3
Adelaide Wind Farm	12	Subset	22	8	2016	N/A	N/A	0	1	Nash Colville	7
Adelaide Wind Farm	17	Subset	22	8	2016	N/A	N/A	0	1	Nash Colville	4
Adelaide Wind Farm	11	Subset	26	8	2016	N/A	N/A	0	1	Nash Colville	4
Adelaide Wind Farm	17	Subset	26	8	2016	N/A	N/A	0	1	Nash Colville	8
Adelaide Wind Farm	11	Subset	1	9	2016	N/A	N/A	0	1	Dan Dilario	3
Adelaide Wind Farm	17	Subset	1	9	2016	N/A	N/A	0	1	Dan Dilario	3
Adelaide Wind Farm	6	Subset	12	9	2016	N/A	N/A	0	1	Dan Dilario	4
Adelaide Wind Farm	12	Subset	20	9	2016	N/A	N/A	0	1	Dan Dilario	5
Adelaide Wind Farm	12	Subset	3	10	2016	N/A	N/A	0	1	Dan Dilario	4
Adelaide Wind Farm	20	Subset	27	10	2016	N/A	N/A	0	1	Dan Dilario	3

Appendix F3: Missed Survey Weekly Monitoring Record

project_name	turbine_number	actual_area_searched_m2	dog_used	search_area_shape	search_area_dimension	transect_separation_m	temp_celsius	wind_speed	wind_direction
Adelaide Wind Farm	14	n/a	no	circular	50m radius, 100m by 100m	5-6m	27	8	W
Adelaide Wind Farm	6	n/a	no	circular	50m radius, 100m by 100m	5-6m	27	18	W
Adelaide Wind Farm	12	n/a	no	circular	50m radius, 100m by 100m	5-6m	27	18	W
Adelaide Wind Farm	19	n/a	no	circular	50m radius, 100m by 100m	5-6m	20	21	W
Adelaide Wind Farm	14	n/a	no	circular	50m radius, 100m by 100m	5-6m	15	17	NW
Adelaide Wind Farm	27	n/a	no	circular	50m radius, 100m by 100m	5-6m	19	15	W
Adelaide Wind Farm	6	n/a	no	circular	50m radius, 100m by 100m	5-6m	30	N/A	N/A
Adelaide Wind Farm	7	n/a	no	circular	50m radius, 100m by 100m	5-6m	30	N/A	N/A
Adelaide Wind Farm	11	n/a	no	circular	50m radius, 100m by 100m	5-6m	30	N/A	N/A
Adelaide Wind Farm	12	n/a	no	circular	50m radius, 100m by 100m	5-6m	30	N/A	N/A
Adelaide Wind Farm	14	n/a	no	circular	50m radius, 100m by 100m	5-6m	30	N/A	N/A
Adelaide Wind Farm	17	n/a	no	circular	50m radius, 100m by 100m	5-6m	30	N/A	N/A
Adelaide Wind Farm	19	n/a	no	circular	50m radius, 100m by 100m	5-6m	30	N/A	N/A
Adelaide Wind Farm	20	n/a	no	circular	50m radius, 100m by 100m	5-6m	30	N/A	N/A
Adelaide Wind Farm	22	n/a	no	circular	50m radius, 100m by 100m	5-6m	30	N/A	N/A
Adelaide Wind Farm	27	n/a	no	circular	50m radius, 100m by 100m	5-6m	30	N/A	N/A
Adelaide Wind Farm	27	n/a	no	circular	50m radius, 100m by 100m	5-6m	30	26	SW
Adelaide Wind Farm	7	n/a	no	circular	50m radius, 100m by 100m	5-6m	22	6	N
Adelaide Wind Farm	7	n/a	no	circular	50m radius, 100m by 100m	5-6m	26	5	SW
Adelaide Wind Farm	20	n/a	no	circular	50m radius, 100m by 100m	5-6m	26	16	N
Adelaide Wind Farm	22	n/a	no	circular	50m radius, 100m by 100m	5-6m	26	16	N
Adelaide Wind Farm	14	n/a	no	circular	50m radius, 100m by 100m	5-6m	24	16	W
Adelaide Wind Farm	17	n/a	no	circular	50m radius, 100m by 100m	5-6m	24	16	W
Adelaide Wind Farm	19	n/a	no	circular	50m radius, 100m by 100m	5-6m	24	16	W
Adelaide Wind Farm	20	n/a	no	circular	50m radius, 100m by 100m	5-6m	24	16	W
Adelaide Wind Farm	22	n/a	no	circular	50m radius, 100m by 100m	5-6m	24	16	W
Adelaide Wind Farm	27	n/a	no	circular	50m radius, 100m by 100m	5-6m	24	16	W
Adelaide Wind Farm	22	n/a	no	circular	50m radius, 100m by 100m	5-6m	24	16	W
Adelaide Wind Farm	27	n/a	no	circular	50m radius, 100m by 100m	5-6m	24	16	W
Adelaide Wind Farm	7	n/a	no	circular	50m radius, 100m by 100m	5-6m	26	18	NW
Adelaide Wind Farm	19	n/a	no	circular	50m radius, 100m by 100m	5-6m	27	18	NW
Adelaide Wind Farm	27	n/a	no	circular	50m radius, 100m by 100m	5-6m	27	18	NW
Adelaide Wind Farm	17	n/a	no	circular	50m radius, 100m by 100m	5-6m	30	27	S
Adelaide Wind Farm	27	n/a	no	circular	50m radius, 100m by 100m	5-6m	30	27	S
Adelaide Wind Farm	19	n/a	no	circular	50m radius, 100m by 100m	5-6m	31	19	S
Adelaide Wind Farm	20	n/a	no	circular	50m radius, 100m by 100m	5-6m	31	19	S
Adelaide Wind Farm	19	n/a	no	circular	50m radius, 100m by 100m	5-6m	29	14	S
Adelaide Wind Farm	6	n/a	no	circular	50m radius, 100m by 100m	5-6m	24	23	SE
Adelaide Wind Farm	7	n/a	no	circular	50m radius, 100m by 100m	5-6m	24	23	SE
Adelaide Wind Farm	11	n/a	no	circular	50m radius, 100m by 100m	5-6m	24	23	SE
Adelaide Wind Farm	12	n/a	no	circular	50m radius, 100m by 100m	5-6m	24	23	SE
Adelaide Wind Farm	14	n/a	no	circular	50m radius, 100m by 100m	5-6m	24	23	SE
Adelaide Wind Farm	17	n/a	no	circular	50m radius, 100m by 100m	5-6m	24	23	SE
Adelaide Wind Farm	19	n/a	no	circular	50m radius, 100m by 100m	5-6m	24	23	SE
Adelaide Wind Farm	20	n/a	no	circular	50m radius, 100m by 100m	5-6m	24	23	SE
Adelaide Wind Farm	22	n/a	no	circular	50m radius, 100m by 100m	5-6m	24	23	SE
Adelaide Wind Farm	27	n/a	no	circular	50m radius, 100m by 100m	5-6m	24	23	SE
Adelaide Wind Farm	12	n/a	no	circular	50m radius, 100m by 100m	5-6m	28	7	N
Adelaide Wind Farm	12	n/a	no	circular	50m radius, 100m by 100m	5-6m	26	14	NE
Adelaide Wind Farm	17	n/a	no	circular	50m radius, 100m by 100m	5-6m	26	14	NE
Adelaide Wind Farm	11	n/a	no	circular	50m radius, 100m by 100m	5-6m	27	20	S
Adelaide Wind Farm	17	n/a	no	circular	50m radius, 100m by 100m	5-6m	27	20	S
Adelaide Wind Farm	11	n/a	no	circular	50m radius, 100m by 100m	5-6m	22	18	NW
Adelaide Wind Farm	17	n/a	no	circular	50m radius, 100m by 100m	5-6m	22	18	NW
Adelaide Wind Farm	6	n/a	no	circular	50m radius, 100m by 100m	5-6m	22	11	S
Adelaide Wind Farm	12	n/a	no	circular	50m radius, 100m by 100m	5-6m	26	10	NW
Adelaide Wind Farm	12	n/a	no	circular	50m radius, 100m by 100m	5-6m	20	10	NW
Adelaide Wind Farm	20	n/a	no	circular	50m radius, 100m by 100m	5-6m	4	10	NE

Appendix F3: Missed Survey Weekly Monitoring Record

project_name	turbine_number	precipitation	cloud_cover_percent	signif_weather	comments
Adelaide Wind Farm	14	None	5	None	Not surveyed - road blocked
Adelaide Wind Farm	6	None	30	None	Not surveyed due to construction
Adelaide Wind Farm	12	None	30	None	Not surveyed due to construction
Adelaide Wind Farm	19	None	50	Rain	Not surveyed due to road construction
Adelaide Wind Farm	14	None	10	None	Not surveyed due to road construction
Adelaide Wind Farm	27	Light Rain	70	Drizzle	Not surveyed due to construction
Adelaide Wind Farm	6	N/A	N/A	Lightning	Lghtning warnings all day - search cancelled
Adelaide Wind Farm	7	N/A	N/A	Lightning	Lghtning warnings all day - search cancelled
Adelaide Wind Farm	11	N/A	N/A	Lightning	Lghtning warnings all day - search cancelled
Adelaide Wind Farm	12	N/A	N/A	Lightning	Lghtning warnings all day - search cancelled
Adelaide Wind Farm	14	N/A	N/A	Lightning	Lghtning warnings all day - search cancelled
Adelaide Wind Farm	17	N/A	N/A	Lightning	Lghtning warnings all day - search cancelled
Adelaide Wind Farm	19	N/A	N/A	Lightning	Lghtning warnings all day - search cancelled
Adelaide Wind Farm	20	N/A	N/A	Lightning	Lghtning warnings all day - search cancelled
Adelaide Wind Farm	22	N/A	N/A	Lightning	Lghtning warnings all day - search cancelled
Adelaide Wind Farm	27	N/A	N/A	Lightning	Lghtning warnings all day - search cancelled
Adelaide Wind Farm	27	Light Rain	40	None	Not surveyed due to construction
Adelaide Wind Farm	7	None	5	Drizzle	Not surveyed due to maintenance
Adelaide Wind Farm	7	None	30	None	Not surveyed due to maintenance
Adelaide Wind Farm	20	None	20	None	Not surveyed - road blocked/road construction
Adelaide Wind Farm	22	None	20	None	Not surveyed due to maintenance
Adelaide Wind Farm	14	None	30	None	Not surveyed - field staff went home sick
Adelaide Wind Farm	17	None	30	None	Not surveyed - field staff went home sick
Adelaide Wind Farm	19	None	30	None	Not surveyed - field staff went home sick
Adelaide Wind Farm	20	None	30	None	Not surveyed - field staff went home sick
Adelaide Wind Farm	22	None	30	None	Not surveyed - field staff went home sick
Adelaide Wind Farm	27	None	30	None	Not surveyed - field staff went home sick
Adelaide Wind Farm	7	None	30	None	Not surveyed due to turbine maintenance
Adelaide Wind Farm	19	None	25	None	Not surveyed due to maintenance
Adelaide Wind Farm	7	None	30	None	Not surveyed due to turbine maintenance
Adelaide Wind Farm	19	None	25	None	Not surveyed due to maintenance
Adelaide Wind Farm	27	None	25	None	Not surveyed - road blocked/road construction
Adelaide Wind Farm	17	None	15	Rain	Not surveyed due to maintenance
Adelaide Wind Farm	27	None	15	Rain	Not surveyed due to maintenance
Adelaide Wind Farm	19	None	15	None	Not surveyed due to maintenance
Adelaide Wind Farm	20	None	15	None	Not surveyed due to maintenance
Adelaide Wind Farm	19	None	30	None	Not surveyed due to maintenance
Adelaide Wind Farm	6	Thunderstorms and Rain	80	Drizzle	Lghtning warnings all day - search cancelled
Adelaide Wind Farm	7	Thunderstorms and Rain	80	Drizzle	Lghtning warnings all day - search cancelled
Adelaide Wind Farm	11	Thunderstorms and Rain	80	Drizzle	Lghtning warnings all day - search cancelled
Adelaide Wind Farm	12	Thunderstorms and Rain	80	Drizzle	Lghtning warnings all day - search cancelled
Adelaide Wind Farm	14	Thunderstorms and Rain	80	Drizzle	Lghtning warnings all day - search cancelled
Adelaide Wind Farm	17	Thunderstorms and Rain	80	Drizzle	Lghtning warnings all day - search cancelled
Adelaide Wind Farm	19	Thunderstorms and Rain	80	Drizzle	Lghtning warnings all day - search cancelled
Adelaide Wind Farm	20	Thunderstorms and Rain	80	Drizzle	Lghtning warnings all day - search cancelled
Adelaide Wind Farm	22	Thunderstorms and Rain	80	Drizzle	Lghtning warnings all day - search cancelled
Adelaide Wind Farm	27	Thunderstorms and Rain	80	Drizzle	Lghtning warnings all day - search cancelled
Adelaide Wind Farm	12	None	10	None	Not surveyed due to maintenance
Adelaide Wind Farm	12	None	30	Light Rain	Not surveyed due to maintenance
Adelaide Wind Farm	17	None	30	Light Rain	Not surveyed due to construction
Adelaide Wind Farm	11	Drizzle	20	Light Rain	Not surveyed due to maintenance
Adelaide Wind Farm	17	Drizzle	20	Light Rain	Not surveyed due to construction
Adelaide Wind Farm	11	None	12	None	Not surveyed due to turbine maintenance
Adelaide Wind Farm	17	None	12	None	Not surveyed due to construction
Adelaide Wind Farm	6	None	6	None	Not surveyed due to turbine maintenance
Adelaide Wind Farm	12	None	9	None	Not surveyed due to turbine maintenance
Adelaide Wind Farm	12	Light Rain	22	Light Rain	Not surveyed due to farmer spraying fertilizer
Adelaide Wind Farm	20	Heavy Rain	70	Heavy Rain	Not surveyed due to turbine maintenance

Appendix F4: Missed Survey Raptor Mortality Monitoring

project_name	turbine_number	treatment_group	day	month	year	start_time	end_time	duration_min	number_of_searchers	searchers_names	days_since_last_search	actual_area_searched_m2	dog_used
Adelaide Wind Farm	26	Raptor Blitz	8	6	2016	N/A	N/A	0	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	26	Raptor Blitz	22	6	2016	N/A	N/A	0	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	15	Raptor Blitz	22	6	2016	N/A	N/A	0	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	26	Raptor Blitz	27	6	2016	N/A	N/A	0	1	Brennan Obermayer	n/a	n/a	No
Adelaide Wind Farm	21	Raptor Blitz	13	7	2016	N/A	N/A	0	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	26	SAR turbines	15	6	2016	N/A	N/A	0	1	Nash Colville	n/a	0	No

Appendix F4: Missed Survey Raptor Mortality Monitoring

project_name	turbine_number	search_area_shape	search_area_dimension	transect_separation_m	temp_celsius	wind_speed	wind_direction	precipitation	cloud_cover_percent	signif_weather	comments
Adelaide Wind Farm	26	Circular	50 m radius	5-6 m	14	24	SE	Drizzle	Overcast	Rain	Not surveyed due to construction
Adelaide Wind Farm	26	Circular	50 m radius	5-6 m	24	19	N	None	Clear	None	Not surveyed due to turbine construction
Adelaide Wind Farm	15	Circular	50 m radius	5-6 m	24	19	N	None	Clear	None	Not surveyed due to turbine maintenance
Adelaide Wind Farm	26	Circular	50 m radius	5-6 m	28-30	5-10	W	None	15	Rain	Not surveyed due to construction.
Adelaide Wind Farm	21	Circular	50 m radius	5-6 m	29	6	NW	None	Few clouds (20%)	None	Not surveyed due to construction
Adelaide Wind Farm	26	Circular	50m radius	5-6m	21	13	S	Rain	20	Light rain	Not surveyed due to construction

Appendix F5: Searcher Efficiency Data

project_name	year	turbine	treatment_group	searcher_name	dog_used	day_placed	month_placed	date	season	placed_by	time	time_collected	species_name_common
Adelaide Wind Farm	2016	20	Subset	Nash Colville	No	12	5	5/12/2016	Spring	Melissa Straus	8:50	17:00	American Robin
Adelaide Wind Farm	2016	17	Subset	Nash Colville	No	12	5	5/12/2016	Spring	Melissa Straus	9:05	N/A	Silver-haired Bat
Adelaide Wind Farm	2016	12	Subset	Nash Colville	No	12	5	5/12/2016	Spring	Melissa Straus	9:30	N/A	Eastern Red Bat
Adelaide Wind Farm	2016	11	Subset	Nash Colville	No	16	5	5/16/2016	Spring	Sam Soehn	8:27	N/A	Eastern Red Bat
Adelaide Wind Farm	2016	19	Subset	Nash Colville	No	16	5	5/16/2016	Spring	Sam Soehn	8:40	N/A	Bird sp.
Adelaide Wind Farm	2016	22	Subset	Nash Colville	No	16	5	5/16/2016	Spring	Sam Soehn	8:54	N/A	Silver-Haired Bat
Adelaide Wind Farm	2016	6	Subset	Nash Colville	No	30	5	5/30/2016	Spring	Sam Soehn	8:50	N/A	Eastern Red Bat
Adelaide Wind Farm	2016	14	Subset	Nash Colville	No	30	5	5/30/2016	Spring	Sam Soehn	9:05	16:05	Bird sp.
Adelaide Wind Farm	2016	17	Subset	Nash Colville	No	30	5	5/30/2016	Spring	Sam Soehn	9:15	N/A	Hoary Bat
Adelaide Wind Farm	2016	7	Subset	Nash Colville	No	2	6	6/2/2016	Spring	Anna Corrigan	7:45	16:30	American Robin
Adelaide Wind Farm	2016	17	Subset	Nash Colville	No	2	6	6/2/2016	Spring	Anna Corrigan	8:10	N/A	Hoary Bat
Adelaide Wind Farm	2016	27	Subset	Nash Colville	No	2	6	6/2/2016	Spring	Anna Corrigan	8:30	N/A	Rose-breasted Grosbeak
Adelaide Wind Farm	2016	14	Subset	Nash Colville	No	6	6	6/6/2016	Spring	Anna Corrigan	8:25	3:00	Hoary Bat
Adelaide Wind Farm	2016	22	Subset	Nash Colville	No	6	6	6/6/2016	Spring	Anna Corrigan	8:45	N/A	Blue Jay
Adelaide Wind Farm	2016	20	Subset	Nash Colville	No	6	6	6/6/2016	Spring	Anna Corrigan	9:00	N/A	White-throated Sparrow
Adelaide Wind Farm	2016	17	Subset	Nash Colville	No	13	6	6/13/2016	Spring	Sam Soehn	8:45	N/A	Bird sp.
Adelaide Wind Farm	2016	19	Subset	Nash Colville	No	13	6	6/13/2016	Spring	Sam Soehn	9:00	N/A	Eastern Red Bat
Adelaide Wind Farm	2016	22	Subset	Nash Colville	No	13	6	6/13/2016	Spring	Sam Soehn	9:15	N/A	Big Brown Bat
Adelaide Wind Farm	2016	6	Subset	Nash Colville	No	16	6	6/16/2016	Spring	Sam Soehn	6:15	N/A	Bird sp.
Adelaide Wind Farm	2016	7	Subset	Nash Colville	No	16	6	6/16/2016	Spring	Sam Soehn	6:25	N/A	Bird sp.
Adelaide Wind Farm	2016	11	Subset	Nash Colville	No	16	6	6/16/2016	Spring	Sam Soehn	6:35	N/A	Big Brown Bat
Adelaide Wind Farm	2016	17	Subset	Nash Colville	No	20	6	6/20/2016	Spring	Brennan Obermayer	8:22	N/A	Eastern Red Bat
Adelaide Wind Farm	2016	19	Subset	Nash Colville	No	20	6	6/20/2016	Spring	Brennan Obermayer	8:38	16:45	Eastern Red Bat
Adelaide Wind Farm	2016	22	Subset	Nash Colville	No	20	6	6/20/2016	Spring	Brennan Obermayer	8:52	N/A	Purple Martin
Adelaide Wind Farm	2016	7	Subset	Nash Colville	No	27	6	6/27/2016	Spring	Brennan Obermayer	7:58	N/A	Bat sp.
Adelaide Wind Farm	2016	14	Subset	Nash Colville	No	27	6	6/27/2016	Spring	Brennan Obermayer	8:20	N/A	American Robin
Adelaide Wind Farm	2016	22	Subset	Nash Colville	No	27	6	6/27/2016	Spring	Brennan Obermayer	8:40	17:00	Hoary Bat
Adelaide Wind Farm	2016	7	Subset	Nash Colville	No	4	7	7/4/2016	Spring	Brennan Obermayer	7:55	17:00	Blue Jay
Adelaide Wind Farm	2016	14	Subset	Nash Colville	No	4	7	7/4/2016	Spring	Brennan Obermayer	8:10	17:15	Bat
Adelaide Wind Farm	2016	19	Subset	Nash Colville	No	4	7	7/4/2016	Spring	Brennan Obermayer	8:25	17:30	Veery
Adelaide Wind Farm	2016	7	Subset	Nash Colville	No	11	7	7/11/2016	Summer	Anna Corrigan	8:20	N/A	Silver-haired Bat
Adelaide Wind Farm	2016	11	Subset	Nash Colville	No	11	7	7/11/2016	Summer	Anna Corrigan	8:30	N/A	Rock Pigeon
Adelaide Wind Farm	2016	14	Subset	Nash Colville	No	11	7	7/11/2016	Summer	Anna Corrigan	8:45	N/A	Hoary Bat
Adelaide Wind Farm	2016	6	Subset	Nash Colville	No	21	7	7/21/2016	Summer	Anna Corrigan	7:10	N/A	Gray Catbird
Adelaide Wind Farm	2016	19	Subset	Nash Colville	No	21	7	7/21/2016	Summer	Anna Corrigan	7:30	N/A	Baltimore Oriole
Adelaide Wind Farm	2016	12	Subset	Nash Colville	No	21	7	7/21/2016	Summer	Anna Corrigan	7:45	N/A	Hoary Bat
Adelaide Wind Farm	2016	7	Subset	Nash Colville	No	29	7	7/29/2016	Summer	Melissa Straus	7:10	N/A	Gray Catbird
Adelaide Wind Farm	2016	17	Subset	Nash Colville	No	29	7	7/29/2016	Summer	Melissa Straus	7:45	N/A	Hoary Bat
Adelaide Wind Farm	2016	14	Subset	Nash Colville	No	29	7	7/29/2016	Summer	Melissa Straus	7:55	N/A	Gray Catbird
Adelaide Wind Farm	2016	17	Subset	Nash Colville	No	8	8	8/8/2016	Summer	Anna Corrigan	8:15	17:30	Horned Lark
Adelaide Wind Farm	2016	20	Subset	Nash Colville	No	8	8	8/8/2016	Summer	Anna Corrigan	8:30	N/A	Cedar Waxwing
Adelaide Wind Farm	2016	27	Subset	Nash Colville	No	8	8	8/8/2016	Summer	Anna Corrigan	8:50	N/A	Eastern Red Bat
Adelaide Wind Farm	2016	6	Subset	Nash Colville	No	11	8	8/11/2016	Summer	Anna Corrigan	8:20	N/A	Hoary Bat
Adelaide Wind Farm	2016	11	Subset	Nash Colville	No	11	8	8/11/2016	Summer	Anna Corrigan	8:35	N/A	Silver-haired Bat
Adelaide Wind Farm	2016	12	Subset	Nash Colville	No	11	8	8/11/2016	Summer	Anna Corrigan	8:50	N/A	Savannah Sparrow
Adelaide Wind Farm	2016	20	Subset	Nash Colville	No	18	8	8/18/2016	Summer	Anna Corrigan	8:15	N/A	American Robin
Adelaide Wind Farm	2016	22	Subset	Nash Colville	No	18	8	8/18/2016	Summer	Anna Corrigan	8:35	15:45	Golden-crowned Kinglet

Appendix F5: Searcher Efficiency Data

project_name	year	turbine	*species_name_scientific*	species_code	condition	carcass_utm_zone	carcass_easting_nad83	carcass_northing_nad83	distance_from_turbine_m
Adelaide Wind Farm	2016	20	*Turdus migratorius*	AMRO	thawed	17T	440210	4765223	43
Adelaide Wind Farm	2016	17	*Lasionycteris noctivagans*	LANO	thawed	17T	444498	4765069	7
Adelaide Wind Farm	2016	12	*Lasiurus borealis*	LABO	thawed	17T	447859	4763358	16
Adelaide Wind Farm	2016	11	*Lasiurus borealis*	LABO	thawed	17T	449157	4763610	13
Adelaide Wind Farm	2016	19	N/A	N/A	thawed	17T	442931	4764967	16
Adelaide Wind Farm	2016	22	*Lasionycteris noctivagans*	LANO	thawed	17T	438286	4763222	27
Adelaide Wind Farm	2016	6	*Lasiurus borealis*	LABO	thawed	17T	451970	4762611	5
Adelaide Wind Farm	2016	14	N/A	N/A	thawed	17T	447143	4764868	27
Adelaide Wind Farm	2016	17	*Lariurus cinereus*	LACI	thawed	17T	444504	4765075	7
Adelaide Wind Farm	2016	7	*Turdus migratorius*	AMRO	thawed	17T	449628	4762156	22
Adelaide Wind Farm	2016	17	*Lariurus cinereus*	LACI	thawed	17T	444500	4765056	4
Adelaide Wind Farm	2016	27	*Pheucticus ludovicianus*	RBGR	thawed	17T	436009	4765474	45
Adelaide Wind Farm	2016	14	*Lariurus cinereus*	LACI	thawed	17T	447176	4764854	3
Adelaide Wind Farm	2016	22	*Cyanocitta cristata*	BLJA	thawed	17T	438324	4763203	20
Adelaide Wind Farm	2016	20	*Zonotrichia albicollis*	WTSP	thawed	17T	440210	4765225	46
Adelaide Wind Farm	2016	17	N/A	N/A	thawed	17T	444504	4445102	33
Adelaide Wind Farm	2016	19	*Lasiurus borealis*	LABO	thawed	17T	442935	4764957	17
Adelaide Wind Farm	2016	22	*Eptesicus fuscus*	EPFU	thawed	17T	438321	4763198	13
Adelaide Wind Farm	2016	6	N/A	N/A	thawed	17T	451983	4762616	4
Adelaide Wind Farm	2016	7	N/A	N/A	thawed	17T	449629	4762180	45
Adelaide Wind Farm	2016	11	*Eptesicus fuscus*	EPFU	thawed	17T	449148	4763614	7
Adelaide Wind Farm	2016	17	*Lasiurus borealis*	LABO	thawed	17T	447216	4764833	39.3
Adelaide Wind Farm	2016	19	*Lasiurus borealis*	LABO	thawed	17T	442967	4764983	25.6
Adelaide Wind Farm	2016	22	*Progne subis*	PUMA	thawed	17T	438289	4763216	19.2
Adelaide Wind Farm	2016	7	N/A	N/A	thawed	17T	449649	4762134	15.1
Adelaide Wind Farm	2016	14	*Turdus migratorius*	AMRO	thawed	17T	447170	4764823	29.3
Adelaide Wind Farm	2016	22	*Lariurus cinereus*	LACI	thawed	17T	438318	4763191	17.4
Adelaide Wind Farm	2016	7	*Cyanocitta cristata*	BLJA	thawed	17T	449622	4762154	33.6
Adelaide Wind Farm	2016	14	N/A	N/A	thawed	17T	447144	4764827	30.7
Adelaide Wind Farm	2016	19	*Catharus fuscescens*	VEER	thawed	17T	442985	4764936	46.4
Adelaide Wind Farm	2016	7	*Lasionycteris noctivagans*	LANO	thawed	17T	449658	4762152	4
Adelaide Wind Farm	2016	11	*Columba livia*	ROPI	thawed	17T	449184	4763610	38
Adelaide Wind Farm	2016	14	*Lariurus cinereus*	LACI	thawed	17T	447170	4764830	24
Adelaide Wind Farm	2016	6	*Dumetella carolinensis*	GRCA	thawed	17T	451938	4762715	4
Adelaide Wind Farm	2016	19	*Icterus galbula*	BAOR	thawed	17T	442988	4769976	40
Adelaide Wind Farm	2016	12	*Lariurus cinereus*	LACI	thawed	17T	447849	4763363	24
Adelaide Wind Farm	2016	7	*Dumetella carolinensis*	GRCA	thawed	17T	449647	4762126	20
Adelaide Wind Farm	2016	17	*Lariurus cinereus*	LACI	thawed	17T	444508	4765050	12
Adelaide Wind Farm	2016	14	*Dumetella carolinensis*	GRCA	thawed	17T	447151	4764843	21
Adelaide Wind Farm	2016	17	*Eremophila alpestris*	HOLA	thawed	17T	444514	4765068	5
Adelaide Wind Farm	2016	20	*Bombycilla cedrorum*	CEDW	thawed	17T	440241	4765210	19
Adelaide Wind Farm	2016	27	*Lasiurus borealis*	LABO	thawed	17T	436002	4765466	42
Adelaide Wind Farm	2016	6	*Lariurus cinereus*	LACI	thawed	17T	451998	4762594	24
Adelaide Wind Farm	2016	11	*Lasionycteris noctivagans*	LANO	thawed	17T	449190	4763624	40
Adelaide Wind Farm	2016	12	*Passerculus sandwichensis*	SAVS	thawed	17T	447883	4763364	6
Adelaide Wind Farm	2016	20	*Turdus migratorius*	AMRO	thawed	17T	440259	4765236	8
Adelaide Wind Farm	2016	22	*Regulus satrapa*	GCKI	thawed	17T	438316	4763208	1

Appendix F5: Searcher Efficiency Data

project_name	year	turbine	direction_from_turbine	marking	temp	wind_speed	cloud	precip	scavenged	found	placed	substrate	visibility_class
Adelaide Wind Farm	2016	20	S	thread	15	19	0	None	0	0	1	Soil	2
Adelaide Wind Farm	2016	17	NW	thread	15	19	0	None	0	1	1	Soil	1
Adelaide Wind Farm	2016	12	W	thread	15	19	0	None	0	1	1	Soil	1
Adelaide Wind Farm	2016	11	SE	thread	5	15	5	None	1	0	1	Access road	1
Adelaide Wind Farm	2016	19	WNW	thread	5	15	5	None	0	1	1	Soil	1
Adelaide Wind Farm	2016	22	NW	thread	5	15	5	None	1	0	1	Tilled soil	2
Adelaide Wind Farm	2016	6	WNW	tag	20	10	5	None	1	0	1	Wheat	2
Adelaide Wind Farm	2016	14	NW	sticker	20	10	5	None	0	0	1	Dead corn	2
Adelaide Wind Farm	2016	17	NW	tag	20	10	5	None	0	1	1	Soil	1
Adelaide Wind Farm	2016	7	WNW	tag	18	1	60	None	0	0	1	Dirt	1
Adelaide Wind Farm	2016	17	NW	thread	18	1	60	None	0	1	1	Weeds	2
Adelaide Wind Farm	2016	27	E	tag	18	1	60	None	0	1	1	Gravel	1
Adelaide Wind Farm	2016	14	E	thread	17	16	0	None	0	0	1	Weeds	2
Adelaide Wind Farm	2016	22	SE	tag	17	16	0	None	0	1	1	Dirt	1
Adelaide Wind Farm	2016	20	W	tag	17	16	0	None	0	1	1	Gravel	1
Adelaide Wind Farm	2016	17	N	tag	15	15	30	None	1	0	1	Soy	2
Adelaide Wind Farm	2016	19	SW	tag	15	15	30	None	0	1	1	Soy and Dirt	1
Adelaide Wind Farm	2016	22	NW	tag	15	15	30	None	0	1	1	Access road	1
Adelaide Wind Farm	2016	6	NE	tag	16	15	90	None	0	1	1	Weeds	2
Adelaide Wind Farm	2016	7	NW	tag	16	15	90	None	1	0	1	Soy	2
Adelaide Wind Farm	2016	11	S	tag	16	15	90	None	0	1	1	Weeds	2
Adelaide Wind Farm	2016	17	SE	grass	18-26	10	50	None	1	0	1	Weeds	2
Adelaide Wind Farm	2016	19	NE	thread	18-26	10	50	None	0	0	1	soil/weeds	2
Adelaide Wind Farm	2016	22	NW	tape	18-26	10	50	None	1	0	1	young beans	2
Adelaide Wind Farm	2016	7	SW	thread	28	5	15	None	1	0	1	soil/veg	2
Adelaide Wind Farm	2016	14	S	tape	28	5	15	None	0	1	1	grass	2
Adelaide Wind Farm	2016	22	S	thread	28	5	15	None	0	0	1	beans	2
Adelaide Wind Farm	2016	7	NW	tape	17	5	0	None	0	0	1	soil/short corn	2
Adelaide Wind Farm	2016	14	SW	thread	17	5	0	None	0	0	1	soil	1
Adelaide Wind Farm	2016	19	SE	grass	17	5	0	None	1	0	1	grass	2
Adelaide Wind Farm	2016	7	NNW	thread	19-21	18	95	None	0	1	1	weeds	2
Adelaide Wind Farm	2016	11	ESE	thread	19-21	18	95	None	0	1	1	gravel	1
Adelaide Wind Farm	2016	14	S	thread	19-21	18	95	None	0	1	1	gravel	1
Adelaide Wind Farm	2016	6	W	thread	18	5-8	10	None	0	1	1	Weeds/dirt	2
Adelaide Wind Farm	2016	19	ENE	thread	18	5-8	10	None	0	1	1	dirt	1
Adelaide Wind Farm	2016	12	WNW	thread	18	5-8	10	None	0	1	1	rock	1
Adelaide Wind Farm	2016	7	SW	tag	18	5	40	None	0	1	1	Soil	2
Adelaide Wind Farm	2016	17	S	tape	18	5	40	None	0	1	1	Veg	2
Adelaide Wind Farm	2016	14	WSW	tag	18	5	40	None	0	1	1	Soil	1
Adelaide Wind Farm	2016	17	E	thread	17-19	4-5	5	None	0	0	1	short veg	2
Adelaide Wind Farm	2016	20	SW	thread	17-19	4-5	5	None	0	1	1	grass	2
Adelaide Wind Farm	2016	27	ESE	thread	17-19	4-5	5	None	0	1	1	grass	2
Adelaide Wind Farm	2016	6	SE	thread	21	3	100	Fog	1	0	1	mowed wheat	2
Adelaide Wind Farm	2016	11	W	thread	21	3	100	Fog	1	0	1	dirt	1
Adelaide Wind Farm	2016	12	NE	thread	21	3	100	Fog	1	0	1	gravel	1
Adelaide Wind Farm	2016	20	NE	tag	20	2	10	None	0	1	1	grass	2
Adelaide Wind Farm	2016	22	E	tag	20	2	10	None	0	0	1	gravel	1

Appendix F5: Searcher Efficiency Data

project_name	year	turbine	treatment_group	searcher_name	dog_used	day_placed	month_placed	date	season	placed_by	time	time_collected	species_name_common
Adelaide Wind Farm	2016	27	Subset	Nash Colville	No	18	8	8/18/2016	Summer	Anna Corrigan	8:55	N/A	Silver-haired Bat
Adelaide Wind Farm	2016	11	Subset	Nash Colville	No	22	8	8/22/2016	Summer	Anna Corrigan	8:15	16:30	Hoary Bat
Adelaide Wind Farm	2016	22	Subset	Nash Colville	No	22	8	8/22/2016	Summer	Anna Corrigan	8:45	16:45	Hoary Bat
Adelaide Wind Farm	2016	7	Subset	Nash Colville	No	29	8	8/29/2016	Summer	Anna Corrigan	7:40	N/A	Red-tailed Hawk
Adelaide Wind Farm	2016	6	Subset	Nash Colville	No	29	8	8/29/2016	Summer	Anna Corrigan	7:55	N/A	Hoary Bat
Adelaide Wind Farm	2016	11	Subset	Nash Colville	No	29	8	8/29/2016	Summer	Anna Corrigan	8:05	N/A	Hoary Bat
Adelaide Wind Farm	2016	12	Subset	Dan Dilario	No	12	9	9/12/2016	Fall	Anna Corrigan	8:00	N/A	Hoary Bat
Adelaide Wind Farm	2016	17	Subset	Dan Dilario	No	12	9	9/12/2016	Fall	Anna Corrigan	8:15	18:00	Savannah Sparrow
Adelaide Wind Farm	2016	27	Subset	Dan Dilario	No	12	9	9/12/2016	Fall	Anna Corrigan	8:30	17:45	Hoary Bat
Adelaide Wind Farm	2016	6	Subset	Dan Dilario	No	15	9	9/15/2016	Fall	Anna Corrigan	8:10	N/A	Hoary Bat
Adelaide Wind Farm	2016	11	Subset	Dan Dilario	No	15	9	9/15/2016	Fall	Anna Corrigan	8:25	N/A	Wilson's Warbler
Adelaide Wind Farm	2016	19	Subset	Dan Dilario	No	15	9	9/15/2016	Fall	Anna Corrigan	8:40	N/A	Peregrine Falcon
Adelaide Wind Farm	2016	7	Subset	Dan Dilario	No	22	9	9/22/2016	Fall	Anna Corrigan	8:00	17:00	Eastern Red Bat
Adelaide Wind Farm	2016	14	Subset	Dan Dilario	No	22	9	9/22/2016	Fall	Anna Corrigan	8:10	17:15	Hoary Bat
Adelaide Wind Farm	2016	20	Subset	Dan Dilario	No	22	9	9/22/2016	Fall	Anna Corrigan	8:25	N/A	Yellow-bellied Sapsucker
Adelaide Wind Farm	2016	7	Subset	Dan Dilario	No	26	9	9/26/2016	Fall	Melissa Straus	7:50	N/A	Silver-haired bat
Adelaide Wind Farm	2016	17	Subset	Dan Dilario	No	26	9	9/26/2016	Fall	Melissa Straus	8:15	N/A	Veery
Adelaide Wind Farm	2016	22	Subset	Dan Dilario	No	26	9	9/26/2016	Fall	Melissa Straus	8:35	N/A	Hoary Bat
Adelaide Wind Farm	2016	6	Subset	Dan Dilario	No	13	10	10/13/2016	Fall	Melissa Straus	8:02		Golden-crowned Kinglet
Adelaide Wind Farm	2016	12	Subset	Dan Dilario	No	13	10	10/13/2016	Fall	Melissa Straus	8:16	17:00	American Woodcock
Adelaide Wind Farm	2016	27	Subset	Dan Dilario	No	13	10	10/13/2016	Fall	Melissa Straus	8:35	16:45	Hoary Bat
Adelaide Wind Farm	2016	6	Subset	Dan Dilario	No	17	10	10/17/2016	Fall	Anna Corrigan	8:15	17:00	Hoary Bat
Adelaide Wind Farm	2016	11	Subset	Dan Dilario	No	17	10	10/17/2016	Fall	Anna Corrigan	8:30	16:45	Sharp-shinned Hawk
Adelaide Wind Farm	2016	14	Subset	Dan Dilario	No	17	10	10/17/2016	Fall	Anna Corrigan	8:40	N/A	Common Redpoll
Adelaide Wind Farm	2016	22	Subset	Dan Dilario	No	20	10	10/20/2016	Fall	Anna Corrigan	8:30	N/A	Hoary Bat
Adelaide Wind Farm	2016	19	Subset	Dan Dilario	No	20	10	10/20/2016	Fall	Anna Corrigan	8:50	N/A	Hoary Bat
Adelaide Wind Farm	2016	12	Subset	Dan Dilario	No	20	10	10/20/2016	Fall	Anna Corrigan	9:05	17:00	Chipping Sparrow

Appendix F5: Searcher Efficiency Data

project_name	year	turbine	*species_name_scientific*	species_code	condition	carcass_utm_zone	carcass_easting_nad83	carcass_northing_nad83	distance_from_turbine_m
Adelaide Wind Farm	2016	27	*Lasionycteris noctivagans*	LANO	thawed	17T	438480	4765479	23
Adelaide Wind Farm	2016	11	*Lariurus cinereus*	LACI	thawed	17T	449163	4763607	20
Adelaide Wind Farm	2016	22	*Lariurus cinereus*	LACI	thawed	17T	438308	4763216	3
Adelaide Wind Farm	2016	7	*Buteo jamaicensis*	RTHA	thawed	17T	449633	4762198	29
Adelaide Wind Farm	2016	6	*Lariurus cinereus*	LACI	thawed	17T	451980	4762596	15
Adelaide Wind Farm	2016	11	*Lariurus cinereus*	LACI	thawed	17T	449190	4763612	48
Adelaide Wind Farm	2016	12	*Lariurus cinereus*	LACI	thawed	17T	447866	4763368	15
Adelaide Wind Farm	2016	17	*Passerculus sandwichensis*	SAVS	thawed	17T	444522	4765050	20
Adelaide Wind Farm	2016	27	*Lariurus cinereus*	LACI	thawed	17T	435961	4765470	0.25
Adelaide Wind Farm	2016	6	*Lariurus cinereus*	LACI	thawed	17T	451993	4762598	20
Adelaide Wind Farm	2016	11	*Wilsonia pusilla*	WIWA	thawed	17T	449152	4763625	1
Adelaide Wind Farm	2016	19	*Falco peregrinus*	PEFA	thawed	17T	442979	4764972	31
Adelaide Wind Farm	2016	7	*Lasiurus borealis*	LABO	thawed	17T	449650	4762146	5
Adelaide Wind Farm	2016	14	*Lariurus cinereus*	LACI	thawed	17T	447169	4764800	49
Adelaide Wind Farm	2016	20	*Sphyrapicus varius*	YBSA	thawed	17T	440242	4765220	14
Adelaide Wind Farm	2016	7	*Lasionycteris noctivagans*	LANO	thawed	17T	449686	4762135	29
Adelaide Wind Farm	2016	17	*Catharus fuscescens*	VEER	thawed	17T	444495	4765069	10
Adelaide Wind Farm	2016	22	*Lariurus cinereus*	LACI	thawed	17T	438296	4763207	10
Adelaide Wind Farm	2016	6	*Regulus satrapa*	GCKI	thawed	17T	451990	4762592	18
Adelaide Wind Farm	2016	12	*Scolopax minor*	AMWO	thawed	17T	447891	4763369	18
Adelaide Wind Farm	2016	27	*Lariurus cinereus*	LACI	thawed	17T	435970	4765491	27
Adelaide Wind Farm	2016	6	*Lariurus cinereus*	LACI	thawed	17T	451976	4762569	46
Adelaide Wind Farm	2016	11	*Accipiter striatus*	SSHA	thawed	17T	449156	4763595	24
Adelaide Wind Farm	2016	14	*Acanthis flammea*	CORE	thawed	17T	447166	4764852	2
Adelaide Wind Farm	2016	22	*Lariurus cinereus*	LACI	thawed	17T	438325	4763197	20
Adelaide Wind Farm	2016	19	*Lariurus cinereus*	LACI	thawed	17T	442951	4764968	0
Adelaide Wind Farm	2016	12	*Spizella passerina*	CHSP	thawed	17T	447828	4763360	48

Appendix F5: Searcher Efficiency Data

project_name	year	turbine	direction_from_turbine	marking	temp	wind_speed	cloud	precip	scavenged	found	placed	substrate	visibility_class
Adelaide Wind Farm	2016	27	NE	tape	20	2	10	None	0	1	1	dirt	1
Adelaide Wind Farm	2016	11	SE	thread	13-16	5	50	None	0	0	1	gravel	1
Adelaide Wind Farm	2016	22	NW	thread	13-16	5	50	None	0	0	1	weeds	2
Adelaide Wind Farm	2016	7	W	thread	18	6	5	None	0	1	1	gravel	1
Adelaide Wind Farm	2016	6	SW	thread	18	6	5	None	0	1	1	grass	2
Adelaide Wind Farm	2016	11	E	thread	18	6	5	None	0	1	1	gravel	1
Adelaide Wind Farm	2016	12	NW	thread	9	3-5	20	None	0	1	1	gravel	1
Adelaide Wind Farm	2016	17	SE	tag	9	3-5	20	None	0	0	1	grass	2
Adelaide Wind Farm	2016	27	W	thread	9	3-5	20	None	0	0	1	cement	1
Adelaide Wind Farm	2016	6	SE	thread	13	9	3	None	0	1	1	grass	2
Adelaide Wind Farm	2016	11	N	thread	13	9	3	None	0	1	1	gravel	1
Adelaide Wind Farm	2016	19	NE	thread	13	9	3	None	0	1	1	weeds	2
Adelaide Wind Farm	2016	7	W	thread	14	4	20	Fog	0	0	1	gravel/weeds	2
Adelaide Wind Farm	2016	14	S	thread	14	4	20	Fog	0	0	1	gravel	1
Adelaide Wind Farm	2016	20	SW	thread	14	4	20	Fog	0	1	1	gravel	1
Adelaide Wind Farm	2016	7	E	thread	17	25	80-100	Light rain	0	0	1	soil	2
Adelaide Wind Farm	2016	17	W	thread	17	25	80-100	Light rain	0	0	1	vegetation	2
Adelaide Wind Farm	2016	22	S	thread	17	25	80-100	Light rain	0	0	1	vegetation/soil	2
Adelaide Wind Farm	2016	6	SE	thread	11	21	30	None	0	1	1	Gravel	1
Adelaide Wind Farm	2016	12	W	thread	11	21	30	None	0	0	1	Vegetation	2
Adelaide Wind Farm	2016	27	ESE	thread	11	21	30	None	0	0	1	Soy (harvested)	1
Adelaide Wind Farm	2016	6	S	thread	17-19	8	100	Fog	0	0	1	Clover	2
Adelaide Wind Farm	2016	11	SE	thread	17-19	8	100	Fog	0	0	1	Soy	2
Adelaide Wind Farm	2016	14	W	thread	17-19	8	100	Fog	0	1	1	Gravel	1
Adelaide Wind Farm	2016	22	SE	thread	6	6	100	Rain	0	1	1	Dirt	1
Adelaide Wind Farm	2016	19	N	thread	6	6	100	Rain	0	1	1	Cement	1
Adelaide Wind Farm	2016	12	W	thread	6	6	100	Rain	0	0	1	Gravel	1

Appendix F6: Searcher Efficiency Summary

project_name	treatment_group	year	season/month	size_category	month_start	month_end	searcher_name	num_of_carcasses_placed	num_carcasses_scavenged	num_carcasses_found	proportion_found	proportion_turbines_searched	weighted_searcher_efficiency
Adelaide Wind Farm	Subset	2016	Spring	Small-Medium	5	6	Nash Colville	30	9	13	0.62	100%	0.619047619
Adelaide Wind Farm	Subset	2016	Summer	Small-Large	7	8	Nash Colville	23	3	16	0.80	100%	0.8
Adelaide Wind Farm	Subset	2016	Fall	Small-Large	9	10	Dan Dilario	21	0	9	0.43	100%	0.428571429

Appendix F7: Scavenger Trial Data

project_name	year	turbine_number	day_placed	season/month	month_placed	Date	species_name_common	species_name_scientific	species_code	condition	carcass_utm_zone	carcass_easting_nad83
Adelaide Wind Farm	2016	6	4	Spring	May	5/4/2016	American Robin	*Turdus migratorius*	AMRO	Thawed	17	451996
Adelaide Wind Farm	2016	11	4	Spring	May	5/4/2016	Kinglet sp.	N/A	N/A	Thawed	17	449187
Adelaide Wind Farm	2016	12	4	Spring	May	5/4/2016	Bat sp.	N/A	N/A	Thawed	17	447863
Adelaide Wind Farm	2016	14	4	Spring	May	5/4/2016	Kinglet sp.	N/A	N/A	Thawed	17	447155
Adelaide Wind Farm	2016	17	4	Spring	May	5/4/2016	Kinglet sp.	N/A	N/A	Thawed	17	444488
Adelaide Wind Farm	2016	14	18	Spring	May	5/18/2016	Hoary bat	*Lasiurus borealis*	LABO	Thawed	17	447150
Adelaide Wind Farm	2016	11	18	Spring	May	5/18/2016	Kinglet sp.	N/A	N/A	Thawed	17	632382
Adelaide Wind Farm	2016	27	18	Spring	May	5/18/2016	Hoary bat	*Lasiurus borealis*	LABO	Thawed	17	435979
Adelaide Wind Farm	2016	22	18	Spring	May	5/18/2016	Kinglet sp.	N/A	N/A	Thawed	17	438260
Adelaide Wind Farm	2016	20	18	Spring	May	5/18/2016	American Robin	*Turdus migratorius*	AMRO	Thawed	17	440212
Adelaide Wind Farm	2016	7	5	Spring	June	6/5/2016	Kinglet sp.	N/A	N/A	Thawed	17	449217
Adelaide Wind Farm	2016	6	5	Spring	June	6/5/2016	American Robin	*Turdus migratorius*	AMRO	Thawed	17	451987
Adelaide Wind Farm	2016	11	5	Spring	June	6/5/2016	Bat sp.	N/A	N/A	Thawed	17	449189
Adelaide Wind Farm	2016	12	5	Spring	June	6/5/2016	Kinglet sp.	N/A	N/A	Thawed	17	447872
Adelaide Wind Farm	2016	14	5	Spring	June	6/5/2016	Kinglet sp.	N/A	N/A	Thawed	17	447184
Adelaide Wind Farm	2016	7	15	Spring	June	6/15/2016	Bat sp.	N/A	N/A	Thawed	17	449679
Adelaide Wind Farm	2016	17	15	Spring	June	6/15/2016	Bat sp.	N/A	N/A	Thawed	17	438336
Adelaide Wind Farm	2016	19	15	Spring	June	6/15/2016	Kinglet sp.	N/A	N/A	Thawed	17	442990
Adelaide Wind Farm	2016	20	15	Spring	June	6/15/2016	American Robin	*Turdus migratorius*	AMRO	Thawed	17	440258
Adelaide Wind Farm	2016	22	15	Spring	June	6/15/2016	Bat sp.	N/A	N/A	Thawed	17	444534
Adelaide Wind Farm	2016	6	13	Summer	July	7/13/2016	Bat sp.	N/A	N/A	Thawed	17	451974
Adelaide Wind Farm	2016	11	13	Summer	July	7/13/2016	Raptor sp.	N/A	N/A	Thawed	17	449192
Adelaide Wind Farm	2016	12	13	Summer	July	7/13/2016	Kinglet sp.	N/A	N/A	Thawed	17	447884
Adelaide Wind Farm	2016	22	13	Summer	July	7/13/2016	American Robin	*Turdus migratorius*	AMRO	Thawed	17	438311
Adelaide Wind Farm	2016	27	13	Summer	July	7/13/2016	Kinglet sp.	N/A	N/A	Thawed	17	435955
Adelaide Wind Farm	2016	7	27	Summer	July	7/27/2016	Gray Catbird	*Dumetella carolinensis*	GRCA	Thawed	17	449666
Adelaide Wind Farm	2016	14	27	Summer	July	7/27/2016	Kinglet sp.	N/A	N/A	Thawed	17	447171
Adelaide Wind Farm	2016	19	27	Summer	July	7/27/2016	Bat sp.	N/A	N/A	Thawed	17	442989
Adelaide Wind Farm	2016	20	27	Summer	July	7/27/2016	Kinglet sp.	N/A	N/A	Thawed	17	440261
Adelaide Wind Farm	2016	22	27	Summer	July	7/27/2016	Bat sp.	N/A	N/A	Thawed	17	438309
Adelaide Wind Farm	2016	7	15	Summer	August	8/15/2016	Kinglet sp.	N/A	N/A	Thawed	17	449660
Adelaide Wind Farm	2016	12	15	Summer	August	8/15/2016	Kinglet sp.	N/A	N/A	Thawed	17	447872
Adelaide Wind Farm	2016	14	15	Summer	August	8/15/2016	Gray Catbird	*Dumetella carolinensis*	GRCA	Thawed	17	447167
Adelaide Wind Farm	2016	20	15	Summer	August	8/15/2016	Bat sp.	N/A	N/A	Thawed	17	440265
Adelaide Wind Farm	2016	27	15	Summer	August	8/15/2016	Bat sp.	N/A	N/A	Thawed	17	435960
Adelaide Wind Farm	2016	6	25	Summer	August	8/24/2016	Kinglet sp.	N/A	N/A	Thawed	17	451976
Adelaide Wind Farm	2016	11	25	Summer	August	8/24/2016	Bat sp.	N/A	N/A	Thawed	17	449661
Adelaide Wind Farm	2016	19	25	Summer	August	8/24/2016	Gray Catbird	*Dumetella carolinensis*	GRCA	Thawed	17	442986
Adelaide Wind Farm	2016	22	25	Summer	August	8/24/2016	Kinglet sp.	N/A	N/A	Thawed	17	438301
Adelaide Wind Farm	2016	27	25	Summer	August	8/24/2016	Kinglet sp.	N/A	N/A	Thawed	17	435963
Adelaide Wind Farm	2016	7	7	Fall	September	9/7/2016	Raptor sp.	N/A	N/A	Thawed	17	449668
Adelaide Wind Farm	2016	12	7	Fall	September	9/7/2016	Bird sp.	N/A	N/A	Thawed	17	447862
Adelaide Wind Farm	2016	14	7	Fall	September	9/7/2016	Bird sp.	N/A	N/A	Thawed	17	447155
Adelaide Wind Farm	2016	17	7	Fall	September	9/7/2016	Bat sp.	N/A	N/A	Thawed	17	444522
Adelaide Wind Farm	2016	20	7	Fall	September	9/7/2016	Bat sp.	N/A	N/A	Thawed	17	440255
Adelaide Wind Farm	2016	14	21	Fall	September	9/21/2016	Raptor sp.	N/A	N/A	Thawed	17	447184
Adelaide Wind Farm	2016	17	21	Fall	September	9/21/2016	Bat sp.	N/A	N/A	Thawed	17	444505
Adelaide Wind Farm	2016	19	21	Fall	September	9/21/2016	Bat sp.	N/A	N/A	Thawed	17	442985
Adelaide Wind Farm	2016	22	21	Fall	September	9/21/2016	Bat sp.	N/A	N/A	Thawed	17	438316
Adelaide Wind Farm	2016	27	21	Fall	September	9/21/2016	Bird sp.	N/A	N/A	Thawed	17	435981
Adelaide Wind Farm	2016	7	5	Fall	October	10/5/2016	Bat sp.	N/A	N/A	Thawed	17	449685
Adelaide Wind Farm	2016	11	5	Fall	October	10/5/2016	Bird sp.	N/A	N/A	Thawed	17	449150
Adelaide Wind Farm	2016	12	5	Fall	October	10/5/2016	Bat sp.	N/A	N/A	Thawed	17	447854
Adelaide Wind Farm	2016	14	5	Fall	October	10/5/2016	Bird sp.	N/A	N/A	Thawed	17	447154
Adelaide Wind Farm	2016	17	5	Fall	October	10/5/2016	Raptor sp.	N/A	N/A	Thawed	17	444493
Adelaide Wind Farm	2016	17	19	Fall	October	10/19/2016	Bat sp.	N/A	N/A	Thawed	17	444526
Adelaide Wind Farm	2016	19	19	Fall	October	10/19/2016	Bird sp.	N/A	N/A	Thawed	17	442956
Adelaide Wind Farm	2016	20	19	Fall	October	10/19/2016	Raptor sp.	N/A	N/A	Thawed	17	440240
Adelaide Wind Farm	2016	22	19	Fall	October	10/19/2016	Bat sp.	N/A	N/A	Thawed	17	438310
Adelaide Wind Farm	2016	27	19	Fall	October	10/19/2016	Bat sp.	N/A	N/A	Thawed	17	435962

Appendix F7: Scavenger Trial Data

project_name	year	turbine_number	carcass_northing_nad83	distance_from_turbine_m	direction_from_turbine	visibility_class	day_visit1	month_visit1	weather_visit1	scavenged_visit1	day_visit2	month_visit2
Adelaide Wind Farm	2016	6	4762594	25	SE	2	5	May	Partly cloudy	no	9	May
Adelaide Wind Farm	2016	11	4763604	41	W	1	5	May	Partly cloudy	no	9	May
Adelaide Wind Farm	2016	12	4763378	21	NW	1	5	May	Partly cloudy	no	9	May
Adelaide Wind Farm	2016	14	4764832	26	SW	1	5	May	Partly cloudy	no	9	May
Adelaide Wind Farm	2016	17	4765072	19	NW	2	5	May	Partly cloudy	no	9	May
Adelaide Wind Farm	2016	14	4764897	46	SE	1	19	May	Fair	no	24	May
Adelaide Wind Farm	2016	11	4753868	47	SE	2	19	May	Fair	no	24	May
Adelaide Wind Farm	2016	27	4765491	33	SW	1	19	May	Fair	no	24	May
Adelaide Wind Farm	2016	22	4763202	37	W	1	19	May	Fair	yes	24	May
Adelaide Wind Farm	2016	20	4765222	41	W	2	19	May	Fair	no	24	May
Adelaide Wind Farm	2016	7	4763617	26	W	2	6	June	Fair	no	9	June
Adelaide Wind Farm	2016	6	4762586	21	S	2	6	June	Fair	no	9	June
Adelaide Wind Farm	2016	11	4763636	40	E	1	6	June	Fair	no	9	June
Adelaide Wind Farm	2016	12	4763358	1	W	1	6	June	Fair	no	9	June
Adelaide Wind Farm	2016	14	4764853	13	E	1	6	June	Fair	no	9	June
Adelaide Wind Farm	2016	7	4762182	41	NE	1	16	June	Thunderstorms	no	20	June
Adelaide Wind Farm	2016	17	4763240	29	E	2	16	June	Thunderstorms	no	20	June
Adelaide Wind Farm	2016	19	4764940	50	E	1	16	June	Thunderstorms	no	20	June
Adelaide Wind Farm	2016	20	4765223	1	W	1	16	June	Thunderstorms	no	20	June
Adelaide Wind Farm	2016	22	4765063	45	NE	2	16	June	Thunderstorms	no	20	June
Adelaide Wind Farm	2016	6	4762591	16	S	2	14	July	Partly cloudy	no	18	July
Adelaide Wind Farm	2016	11	4763627	44	E	1	14	July	Partly cloudy	no	18	July
Adelaide Wind Farm	2016	12	4763362	3	S	1	14	July	Partly cloudy	no	18	July
Adelaide Wind Farm	2016	22	4763222	11	N	2	14	July	Partly cloudy	no	18	July
Adelaide Wind Farm	2016	27	4765462	2	W	1	14	July	Partly cloudy	no	18	July
Adelaide Wind Farm	2016	7	4762146	8	S	1	29	July	Fair	no	2	August
Adelaide Wind Farm	2016	14	4764807	44	S	1	29	July	Fair	no	2	August
Adelaide Wind Farm	2016	19	4764983	39	NE	2	29	July	Fair	no	2	August
Adelaide Wind Farm	2016	20	4765233	6	NE	2	29	July	Fair	no	2	August
Adelaide Wind Farm	2016	22	4763216	3	N	2	29	July	Fair	no	2	August
Adelaide Wind Farm	2016	7	4762156	11	E	2	16	August	Not Recorded	no	18	August
Adelaide Wind Farm	2016	12	4763345	12	SW	1	16	August	Not Recorded	no	18	August
Adelaide Wind Farm	2016	14	4764858	6	N	1	16	August	Not Recorded	no	18	August
Adelaide Wind Farm	2016	20	4765215	14	SE	2	16	August	Not Recorded	no	18	August
Adelaide Wind Farm	2016	27	4765464	<1	SW	1	16	August	Not Recorded	no	18	August
Adelaide Wind Farm	2016	6	4762616	5	N	2	26	August	Fair	no	29	August
Adelaide Wind Farm	2016	11	4762153	8	N	1	26	August	Fair	no	29	August
Adelaide Wind Farm	2016	19	4764962	38	E	1	26	August	Fair	no	29	August
Adelaide Wind Farm	2016	22	4763204	7	W	1	26	August	Fair	no	29	August
Adelaide Wind Farm	2016	27	4765450	15	S	2	26	August	Fair	no	29	August
Adelaide Wind Farm	2016	7	4762136	8	SE	2	8	September	Cloudy, 26°C	no	12	September
Adelaide Wind Farm	2016	12	4763347	18	SE	1	8	September	Cloudy, 26°C	no	12	September
Adelaide Wind Farm	2016	14	4764845	17	SW	2	8	September	Cloudy, 26°C	yes	12	September
Adelaide Wind Farm	2016	17	4765078	20	SE	1	8	September	Cloudy, 26°C	no	12	September
Adelaide Wind Farm	2016	20	4765241	11	N	2	8	September	Cloudy, 26°C	no	12	September
Adelaide Wind Farm	2016	14	4764836	21	SE	1	22	September	Cloudy, 26°C	no	26	September
Adelaide Wind Farm	2016	17	4765067	3	W	1	22	September	Cloudy, 26°C	yes	26	September
Adelaide Wind Farm	2016	19	4764972	36	E	2	22	September	Cloudy, 26°C	no	26	September
Adelaide Wind Farm	2016	22	4763210	1	W	1	22	September	Cloudy, 26°C	yes	26	September
Adelaide Wind Farm	2016	27	4765469	20	NE	1	22	September	Cloudy, 26°C	no	26	September
Adelaide Wind Farm	2016	7	4762146	25	W	2	6	October	Sunny, 22°C	yes	11	October
Adelaide Wind Farm	2016	11	4763613	14	N	2	6	October	Sunny, 22°C	no	11	October
Adelaide Wind Farm	2016	12	4763361	6	W	1	6	October	Sunny, 22°C	no	11	October
Adelaide Wind Farm	2016	14	4764845	15	W	1	6	October	Sunny, 22°C	no	11	October
Adelaide Wind Farm	2016	17	4765082	15	E	2	6	October	Sunny, 22°C	yes	11	October
Adelaide Wind Farm	2016	17	4765087	18	SE	2	20	October	Rain, 13°C	no	24	October
Adelaide Wind Farm	2016	19	4764959	9	S	1	20	October	Rain, 13°C	no	24	October
Adelaide Wind Farm	2016	20	4765239	12	NW	2	20	October	Rain, 13°C	no	24	October
Adelaide Wind Farm	2016	22	4763207	1	N	1	20	October	Rain, 13°C	no	24	October
Adelaide Wind Farm	2016	27	4765462	15	S	2	20	October	Rain, 13°C	no	24	October

Appendix F7: Scavenger Trial Data

project_name	year	turbine_number	weather_visit2	scavenged_visit2	day_visit3	month_visit3	weather_visit3	scavenged_visit3	day_visit4	month_visit4	weather_visit4	scavenged_visit4
Adelaide Wind Farm	2016	6	Overcast	no	12	May	Partly cloudy	no	16	May	Partly cloudy	no
Adelaide Wind Farm	2016	11	Overcast	no	12	May	Partly cloudy	no	16	May	Partly cloudy	yes
Adelaide Wind Farm	2016	12	Overcast	no	12	May	Partly cloudy	no	16	May	Partly cloudy	yes
Adelaide Wind Farm	2016	14	Overcast	yes	12	May	Partly cloudy	yes	16	May	Partly cloudy	yes
Adelaide Wind Farm	2016	17	Overcast	no	12	May	Partly cloudy	no	16	May	Partly cloudy	no
Adelaide Wind Farm	2016	14	Clear	no	26	May	Overcast	no	30	May	Clear	yes
Adelaide Wind Farm	2016	11	Clear	no	26	May	Overcast	no	30	May	Clear	no
Adelaide Wind Farm	2016	27	Clear	no	26	May	Overcast	yes	30	May	Clear	yes
Adelaide Wind Farm	2016	22	Clear	yes	26	May	Overcast	yes	30	May	Clear	yes
Adelaide Wind Farm	2016	20	Clear	no	26	May	Overcast	yes	30	May	Clear	yes
Adelaide Wind Farm	2016	7	Clear	no	13	June	Overcast	yes	20	June	Fair	yes
Adelaide Wind Farm	2016	6	Clear	yes	13	June	Overcast	yes	20	June	Fair	yes
Adelaide Wind Farm	2016	11	Clear	no	13	June	Overcast	no	20	June	Fair	no
Adelaide Wind Farm	2016	12	Clear	no	13	June	Overcast	no	20	June	Fair	yes
Adelaide Wind Farm	2016	14	Clear	no	13	June	Overcast	no	20	June	Fair	yes
Adelaide Wind Farm	2016	7	Overcast	no	23	June	Clear	no	27	June	Clear	no
Adelaide Wind Farm	2016	17	Overcast	no	23	June	Clear	no	27	June	Clear	no
Adelaide Wind Farm	2016	19	Overcast	no	23	June	Clear	no	27	June	Clear	yes
Adelaide Wind Farm	2016	20	Overcast	no	23	June	Clear	yes	27	June	Clear	yes
Adelaide Wind Farm	2016	22	Overcast	no	23	June	Clear	no	27	June	Clear	yes
Adelaide Wind Farm	2016	6	Partly cloudy	no	21	July	Fair	no	26	July	Partly cloudy	no
Adelaide Wind Farm	2016	11	Partly cloudy	no	21	July	Fair	no	26	July	Partly cloudy	yes
Adelaide Wind Farm	2016	12	Partly cloudy	no	21	July	Fair	yes	26	July	Partly cloudy	yes
Adelaide Wind Farm	2016	22	Partly cloudy	no	21	July	Fair	no	26	July	Partly cloudy	yes
Adelaide Wind Farm	2016	27	Partly cloudy	no	21	July	Fair	no	26	July	Overcast	no
Adelaide Wind Farm	2016	7	Fair	no	4	August	Few clouds	no	8	August	Partly cloudy	no
Adelaide Wind Farm	2016	14	Fair	yes	4	August	Few clouds	yes	8	August	Partly cloudy	yes
Adelaide Wind Farm	2016	19	Fair	yes	4	August	Few clouds	yes	8	August	Partly cloudy	yes
Adelaide Wind Farm	2016	20	Fair	yes	4	August	Few clouds	yes	8	August	Partly cloudy	yes
Adelaide Wind Farm	2016	22	Fair	no	4	August	Few clouds	no	8	August	Partly cloudy	no
Adelaide Wind Farm	2016	7	Fair	no	22	August	Fair	no	26	August	Fair	yes
Adelaide Wind Farm	2016	12	Fair	no	22	August	Fair	no	26	August	Fair	no
Adelaide Wind Farm	2016	14	Fair	no	22	August	Fair	no	26	August	Fair	no
Adelaide Wind Farm	2016	20	Fair	no	22	August	Fair	no	26	August	Fair	no
Adelaide Wind Farm	2016	27	Fair	no	22	August	Fair	no	26	August	Fair	no
Adelaide Wind Farm	2016	6	Fair	no	1	September	Fair	yes	6	September	Not Recorded	yes
Adelaide Wind Farm	2016	11	Fair	no	1	September	Fair	yes	6	September	Not Recorded	yes
Adelaide Wind Farm	2016	19	Fair	no	1	September	Fair	no	6	September	Not Recorded	no
Adelaide Wind Farm	2016	22	Fair	no	1	September	Fair	yes	6	September	Not Recorded	yes
Adelaide Wind Farm	2016	27	Fair	no	1	September	Fair	yes	6	September	Not Recorded	yes
Adelaide Wind Farm	2016	7	Sunny, 22°C	no	15	September	Cloudy, 22°C	no	20	September	Sunny, 26°C	no
Adelaide Wind Farm	2016	12	Sunny, 22°C	no	15	September	Cloudy, 22°C	yes	20	September	Sunny, 26°C	yes
Adelaide Wind Farm	2016	14	Sunny, 22°C	yes	15	September	Cloudy, 22°C	yes	20	September	Sunny, 26°C	yes
Adelaide Wind Farm	2016	17	Sunny, 22°C	no	15	September	Cloudy, 22°C	yes	20	September	Sunny, 26°C	yes
Adelaide Wind Farm	2016	20	Sunny, 22°C	no	15	September	Cloudy, 22°C	no	20	September	Sunny, 26°C	no
Adelaide Wind Farm	2016	14	Rain, 17°C	no	29	September	Rain, 16°C	no	3	October	Cloudy, 20°C	no
Adelaide Wind Farm	2016	17	Rain, 17°C	yes	29	September	Rain, 16°C	yes	3	October	Cloudy, 20°C	yes
Adelaide Wind Farm	2016	19	Rain, 17°C	no	29	September	Rain, 16°C	no	3	October	Cloudy, 20°C	yes
Adelaide Wind Farm	2016	22	Rain, 17°C	yes	29	September	Rain, 16°C	yes	3	October	Cloudy, 20°C	yes
Adelaide Wind Farm	2016	27	Rain, 17°C	yes	29	September	Rain, 16°C	yes	3	October	Cloudy, 20°C	yes
Adelaide Wind Farm	2016	7	Cloudy, 17°C	yes	13	October	Cloudy, 11°C	yes	17	October	Sunny, 22°C	yes
Adelaide Wind Farm	2016	11	Cloudy, 17°C	no	13	October	Cloudy, 11°C	yes	17	October	Sunny, 22°C	yes
Adelaide Wind Farm	2016	12	Cloudy, 17°C	no	13	October	Cloudy, 11°C	no	17	October	Sunny, 22°C	no
Adelaide Wind Farm	2016	14	Cloudy, 17°C	no	13	October	Cloudy, 11°C	no	17	October	Sunny, 22°C	no
Adelaide Wind Farm	2016	17	Cloudy, 17°C	yes	13	October	Cloudy, 11°C	yes	17	October	Sunny, 22°C	yes
Adelaide Wind Farm	2016	17	Rain, 9°C	yes	27	October	Rain, 10°C	yes	1	November	N/A	yes
Adelaide Wind Farm	2016	19	Rain, 9°C	no	27	October	Rain, 10°C	yes	1	November	N/A	yes
Adelaide Wind Farm	2016	20	Rain, 9°C	no	27	October	Rain, 10°C	no	1	November	N/A	no
Adelaide Wind Farm	2016	22	Rain, 9°C	no	27	October	Rain, 10°C	no	1	November	N/A	no
Adelaide Wind Farm	2016	27	Rain, 9°C	yes	27	October	Rain, 10°C	yes	1	November	N/A	yes

Appendix F8: Scavenger Trial Summary

project_name	treatment_group	year	season/month	size_category	month_start	month_end	turbine_number	month	num_carcasses_placed_n0	num_carcasses_left_n1	num_carcasses_left_n2	num_carcasses_left_n3	num_carcasses_left_n4	scavenger_correction_Sc
Adelaide Wind Farm	Subset	2016	Spring	medium	5	6	6	May	1	1	1	1	1	1
Adelaide Wind Farm	Subset	2016	Spring	small	5	6	11	May	1	1	1	1	0	0.75
Adelaide Wind Farm	Subset	2016	Spring	small	5	6	12	May	1	1	1	1	0	0.75
Adelaide Wind Farm	Subset	2016	Spring	small	5	6	14	May	1	1	0	0	0	0.5
Adelaide Wind Farm	Subset	2016	Spring	small	5	6	17	May	1	1	1	1	1	1
Adelaide Wind Farm	Subset	2016	Spring	medium	5	6	14	May	1	1	1	1	0	0.75
Adelaide Wind Farm	Subset	2016	Spring	small	5	6	11	May	1	1	1	1	1	1
Adelaide Wind Farm	Subset	2016	Spring	medium	5	6	27	May	1	1	1	0	0	0.666666667
Adelaide Wind Farm	Subset	2016	Spring	small	5	6	22	May	1	0	0	0	0	0
Adelaide Wind Farm	Subset	2016	Spring	medium	5	6	20	May	1	1	1	0	0	0.666666667
Adelaide Wind Farm	Subset	2016	Spring	small	5	6	7	June	1	1	1	0	0	0.666666667
Adelaide Wind Farm	Subset	2016	Spring	medium	5	6	6	June	1	1	0	0	0	0.5
Adelaide Wind Farm	Subset	2016	Spring	small	5	6	11	June	1	1	1	1	1	1
Adelaide Wind Farm	Subset	2016	Spring	small	5	6	12	June	1	1	1	1	0	0.75
Adelaide Wind Farm	Subset	2016	Spring	small	5	6	14	June	1	1	1	1	0	0.75
Adelaide Wind Farm	Subset	2016	Spring	small	5	6	7	June	1	1	1	1	1	1
Adelaide Wind Farm	Subset	2016	Spring	small	5	6	17	June	1	1	1	1	1	1
Adelaide Wind Farm	Subset	2016	Spring	small	5	6	19	June	1	1	1	1	0	0.75
Adelaide Wind Farm	Subset	2016	Spring	medium	5	6	20	June	1	1	1	0	0	0.666666667
Adelaide Wind Farm	Subset	2016	Spring	small	5	6	22	June	1	1	1	1	0	0.75
Adelaide Wind Farm	Subset	2016	Summer	small	7	8	6	July	1	1	1	1	1	1
Adelaide Wind Farm	Subset	2016	Summer	large	7	8	11	July	1	1	1	1	0	0.75
Adelaide Wind Farm	Subset	2016	Summer	small	7	8	12	July	1	1	1	0	0	0.666666667
Adelaide Wind Farm	Subset	2016	Summer	medium	7	8	22	July	1	1	1	1	0	0.75
Adelaide Wind Farm	Subset	2016	Summer	small	7	8	27	July	1	1	1	1	1	1
Adelaide Wind Farm	Subset	2016	Summer	medium	7	8	7	July	1	1	1	1	1	1
Adelaide Wind Farm	Subset	2016	Summer	small	7	8	14	July	1	1	0	0	0	0.5
Adelaide Wind Farm	Subset	2016	Summer	small	7	8	19	July	1	1	0	0	0	0.5
Adelaide Wind Farm	Subset	2016	Summer	small	7	8	20	July	1	1	0	0	0	0.5
Adelaide Wind Farm	Subset	2016	Summer	small	7	8	22	July	1	1	1	1	1	1
Adelaide Wind Farm	Subset	2016	Summer	small	7	8	7	August	1	1	1	0	0	0.666666667
Adelaide Wind Farm	Subset	2016	Summer	small	7	8	12	August	1	1	1	1	1	1
Adelaide Wind Farm	Subset	2016	Summer	medium	7	8	14	August	1	1	1	1	1	1
Adelaide Wind Farm	Subset	2016	Summer	small	7	8	20	August	1	1	1	1	1	1
Adelaide Wind Farm	Subset	2016	Summer	small	7	8	27	August	1	1	1	1	1	1
Adelaide Wind Farm	Subset	2016	Summer	small	7	8	6	August	1	1	1	0	0	0.666666667
Adelaide Wind Farm	Subset	2016	Summer	small	7	8	11	August	1	1	1	0	0	0.666666667
Adelaide Wind Farm	Subset	2016	Summer	medium	7	8	19	August	1	1	1	1	1	1
Adelaide Wind Farm	Subset	2016	Summer	small	7	8	22	August	1	1	1	0	0	0.666666667
Adelaide Wind Farm	Subset	2016	Summer	small	7	8	27	August	1	1	1	0	0	0.666666667
Adelaide Wind Farm	Subset	2016	Fall	large	9	10	7	September	1	1	1	1	1	1
Adelaide Wind Farm	Subset	2016	Fall	small	9	10	12	September	1	1	1	0	0	0.666666667
Adelaide Wind Farm	Subset	2016	Fall	small	9	10	14	September	1	0	0	0	0	0
Adelaide Wind Farm	Subset	2016	Fall	small	9	10	17	September	1	1	1	0	0	0.666666667
Adelaide Wind Farm	Subset	2016	Fall	small	9	10	20	September	1	1	1	1	1	1
Adelaide Wind Farm	Subset	2016	Fall	large	9	10	14	September	1	1	1	1	1	1
Adelaide Wind Farm	Subset	2016	Fall	small	9	10	17	September	1	0	0	0	0	0
Adelaide Wind Farm	Subset	2016	Fall	small	9	10	19	September	1	1	1	1	0	0.75
Adelaide Wind Farm	Subset	2016	Fall	small	9	10	22	September	1	0	0	0	0	0
Adelaide Wind Farm	Subset	2016	Fall	small	9	10	27	September	1	1	0	0	0	0.5
Adelaide Wind Farm	Subset	2016	Fall	small	9	10	7	October	1	0	0	0	0	0
Adelaide Wind Farm	Subset	2016	Fall	small	9	10	11	October	1	1	1	0	0	0.666666667
Adelaide Wind Farm	Subset	2016	Fall	small	9	10	12	October	1	1	1	1	1	1
Adelaide Wind Farm	Subset	2016	Fall	small	9	10	14	October	1	1	1	1	1	1
Adelaide Wind Farm	Subset	2016	Fall	large	9	10	17	October	1	0	0	0	0	0
Adelaide Wind Farm	Subset	2016	Fall	small	9	10	17	October	1	1	0	0	0	0.5
Adelaide Wind Farm	Subset	2016	Fall	small	9	10	19	October	1	1	1	0	0	0.666666667
Adelaide Wind Farm	Subset	2016	Fall	large	9	10	20	October	1	1	1	1	1	1
Adelaide Wind Farm	Subset	2016	Fall	small	9	10	22	October	1	1	1	1	1	1
Adelaide Wind Farm	Subset	2016	Fall	small	9	10	27	October	1	1	0	0	0	0.5

Appendix F9: Percent Area Search Data

project_name	turbine_number	day	month	year	date	actual_area_searched_m2	actual_searched_capped_m2	total_area_for_survey
Adelaide Wind Farm	6	2	5	2016	05/02/16	7854	7854	7854
Adelaide Wind Farm	7	2	5	2016	05/02/16	7854	7854	7854
Adelaide Wind Farm	11	2	5	2016	05/02/16	7854	7854	7854
Adelaide Wind Farm	12	2	5	2016	05/02/16	7854	7854	7854
Adelaide Wind Farm	14	2	5	2016	05/02/16	7854	7854	7854
Adelaide Wind Farm	17	2	5	2016	05/02/16	7293	7293	7854
Adelaide Wind Farm	19	2	5	2016	05/02/16	7649	7649	7854
Adelaide Wind Farm	20	2	5	2016	05/02/16	7854	7854	7854
Adelaide Wind Farm	22	2	5	2016	05/02/16	7854	7854	7854
Adelaide Wind Farm	27	2	5	2016	05/02/16	7854	7854	7854
Adelaide Wind Farm	6	5	5	2016	05/05/16	7854	7854	7854
Adelaide Wind Farm	7	5	5	2016	05/05/16	7854	7854	7854
Adelaide Wind Farm	11	5	5	2016	05/05/16	7854	7854	7854
Adelaide Wind Farm	12	5	5	2016	05/05/16	7854	7854	7854
Adelaide Wind Farm	14	5	5	2016	05/05/16	7854	7854	7854
Adelaide Wind Farm	17	5	5	2016	05/05/16	7293	7293	7854
Adelaide Wind Farm	19	5	5	2016	05/05/16	7649	7649	7854
Adelaide Wind Farm	20	5	5	2016	05/05/16	7854	7854	7854
Adelaide Wind Farm	22	5	5	2016	05/05/16	7854	7854	7854
Adelaide Wind Farm	27	5	5	2016	05/05/16	7854	7854	7854
Adelaide Wind Farm	6	9	5	2016	05/09/16	7854	7854	7854
Adelaide Wind Farm	7	9	5	2016	05/09/16	7854	7854	7854
Adelaide Wind Farm	11	9	5	2016	05/09/16	7854	7854	7854
Adelaide Wind Farm	12	9	5	2016	05/09/16	7854	7854	7854
Adelaide Wind Farm	14	9	5	2016	05/09/16	7854	7854	7854
Adelaide Wind Farm	17	9	5	2016	05/09/16	7629	7629	7854
Adelaide Wind Farm	19	9	5	2016	05/09/16	7771	7771	7854
Adelaide Wind Farm	20	9	5	2016	05/09/16	7854	7854	7854
Adelaide Wind Farm	22	9	5	2016	05/09/16	7854	7854	7854
Adelaide Wind Farm	27	9	5	2016	05/09/16	7854	7854	7854
Adelaide Wind Farm	6	12	5	2016	05/12/16	7854	7854	7854
Adelaide Wind Farm	11	12	5	2016	05/12/16	7854	7854	7854
Adelaide Wind Farm	12	12	5	2016	05/12/16	7854	7854	7854
Adelaide Wind Farm	14	12	5	2016	05/12/16	7854	7854	7854
Adelaide Wind Farm	17	12	5	2016	05/12/16	7702	7702	7854
Adelaide Wind Farm	19	12	5	2016	05/12/16	7854	7854	7854
Adelaide Wind Farm	20	12	5	2016	05/12/16	7854	7854	7854
Adelaide Wind Farm	22	12	5	2016	05/12/16	7854	7854	7854
Adelaide Wind Farm	27	12	5	2016	05/12/16	7854	7854	7854
Adelaide Wind Farm	7	12	5	2016	05/12/16	7854	7854	7854
Adelaide Wind Farm	6	16	5	2016	05/16/16	7854	7854	7854
Adelaide Wind Farm	7	16	5	2016	05/16/16	7854	7854	7854
Adelaide Wind Farm	11	16	5	2016	05/16/16	7854	7854	7854
Adelaide Wind Farm	12	16	5	2016	05/16/16	7854	7854	7854
Adelaide Wind Farm	14	16	5	2016	05/16/16	7854	7854	7854
Adelaide Wind Farm	17	16	5	2016	05/16/16	7854	7854	7854
Adelaide Wind Farm	19	16	5	2016	05/16/16	7750	7750	7854

Appendix F9: Percent Area Search Data

project_name	turbine_number	day	month	year	date	actual_area_searched_m2	actual_searched_capped_m2	total_area_for_survey
Adelaide Wind Farm	20	16	5	2016	05/16/16	7854	7854	7854
Adelaide Wind Farm	22	16	5	2016	05/16/16	7854	7854	7854
Adelaide Wind Farm	27	16	5	2016	05/16/16	7854	7854	7854
Adelaide Wind Farm	6	19	5	2016	05/19/16	7854	7854	7854
Adelaide Wind Farm	7	19	5	2016	05/19/16	7854	7854	7854
Adelaide Wind Farm	11	19	5	2016	05/19/16	7854	7854	7854
Adelaide Wind Farm	12	19	5	2016	05/19/16	7854	7854	7854
Adelaide Wind Farm	14	19	5	2016	05/19/16	7854	7854	7854
Adelaide Wind Farm	17	19	5	2016	05/19/16	7854	7854	7854
Adelaide Wind Farm	19	19	5	2016	05/19/16	7632	7632	7854
Adelaide Wind Farm	20	19	5	2016	05/19/16	7854	7854	7854
Adelaide Wind Farm	27	19	5	2016	05/19/16	7854	7854	7854
Adelaide Wind Farm	22	19	5	2016	05/19/16	7854	7854	7854
Adelaide Wind Farm	6	24	5	2016	05/24/16	5824	5824	7854
Adelaide Wind Farm	7	24	5	2016	05/24/16	7854	7854	7854
Adelaide Wind Farm	11	24	5	2016	05/24/16	7854	7854	7854
Adelaide Wind Farm	12	24	5	2016	05/24/16	7350	7350	7854
Adelaide Wind Farm	17	24	5	2016	05/24/16	7125	7125	7854
Adelaide Wind Farm	19	24	5	2016	05/24/16	7854	7854	7854
Adelaide Wind Farm	20	24	5	2016	05/24/16	7854	7854	7854
Adelaide Wind Farm	22	24	5	2016	05/24/16	7854	7854	7854
Adelaide Wind Farm	27	24	5	2016	05/24/16	7854	7854	7854
Adelaide Wind Farm	6	26	5	2016	05/26/16	5253	5253	7854
Adelaide Wind Farm	7	26	5	2016	05/26/16	7854	7854	7854
Adelaide Wind Farm	11	26	5	2016	05/26/16	6720	6720	7854
Adelaide Wind Farm	12	26	5	2016	05/26/16	7255	7255	7854
Adelaide Wind Farm	14	26	5	2016	05/26/16	5000	5000	7854
Adelaide Wind Farm	19	26	5	2016	05/26/16	7854	7854	7854
Adelaide Wind Farm	20	26	5	2016	05/26/16	7475	7475	7854
Adelaide Wind Farm	22	26	5	2016	05/26/16	7854	7854	7854
Adelaide Wind Farm	22	26	5	2016	05/26/16	7854	7854	7854
Adelaide Wind Farm	17	26	5	2016	05/26/16	7167	7167	7854
Adelaide Wind Farm	6	30	5	2016	05/30/16	5000	5000	7854
Adelaide Wind Farm	7	30	5	2016	05/30/16	7854	7854	7854
Adelaide Wind Farm	11	30	5	2016	05/30/16	6750	6750	7854
Adelaide Wind Farm	12	30	5	2016	05/30/16	7000	7000	7854
Adelaide Wind Farm	14	30	5	2016	05/30/16	5000	5000	7854
Adelaide Wind Farm	17	30	5	2016	05/30/16	7000	7000	7854
Adelaide Wind Farm	19	30	5	2016	05/30/16	7854	7854	7854
Adelaide Wind Farm	20	30	5	2016	05/30/16	7854	7854	7854
Adelaide Wind Farm	22	30	5	2016	05/30/16	7854	7854	7854
Adelaide Wind Farm	27	30	5	2016	05/30/16	7854	7854	7854
Adelaide Wind Farm	7	2	6	2016	06/02/16	7845	7845	7854
Adelaide Wind Farm	11	2	6	2016	06/02/16	6598	6598	7854
Adelaide Wind Farm	14	2	6	2016	06/02/16	5250	5250	7854
Adelaide Wind Farm	17	2	6	2016	06/02/16	7015	7015	7854
Adelaide Wind Farm	19	2	6	2016	06/02/16	7854	7854	7854

Appendix F9: Percent Area Search Data

project_name	turbine_number	day	month	year	date	actual_area_searched_m2	actual_searched_capped_m2	total_area_for_survey
Adelaide Wind Farm	20	2	6	2016	06/02/16	7381	7381	7854
Adelaide Wind Farm	22	2	6	2016	06/02/16	7854	7854	7854
Adelaide Wind Farm	27	2	6	2016	06/02/16	7854	7854	7854
Adelaide Wind Farm	6	6	6	2016	06/06/16	4000	4000	7854
Adelaide Wind Farm	7	6	6	2016	06/06/16	7854	7854	7854
Adelaide Wind Farm	11	6	6	2016	06/06/16	4500	4500	7854
Adelaide Wind Farm	14	6	6	2016	06/06/16	7854	7854	7854
Adelaide Wind Farm	17	6	6	2016	06/06/16	6500	6500	7854
Adelaide Wind Farm	20	6	6	2016	06/06/16	4500	4500	7854
Adelaide Wind Farm	22	6	6	2016	06/06/16	7854	7854	7854
Adelaide Wind Farm	27	6	6	2016	06/06/16	7854	7854	7854
Adelaide Wind Farm	12	6	6	2016	06/06/16	3000	3000	7854
Adelaide Wind Farm	6	9	6	2016	06/09/16	4000	4000	7854
Adelaide Wind Farm	7	9	6	2016	06/09/16	7854	7854	7854
Adelaide Wind Farm	11	9	6	2016	06/09/16	4500	4500	7854
Adelaide Wind Farm	12	9	6	2016	06/09/16	3000	3000	7854
Adelaide Wind Farm	17	9	6	2016	06/09/16	6500	6500	7854
Adelaide Wind Farm	19	9	6	2016	06/09/16	7854	7854	7854
Adelaide Wind Farm	20	9	6	2016	06/09/16	4500	4500	7854
Adelaide Wind Farm	22	9	6	2016	06/09/16	7854	7854	7854
Adelaide Wind Farm	27	9	6	2016	06/09/16	7854	7854	7854
Adelaide Wind Farm	6	13	6	2016	06/13/16	4000	4000	7854
Adelaide Wind Farm	7	13	6	2016	06/13/16	7854	7854	7854
Adelaide Wind Farm	11	13	6	2016	06/13/16	4500	4500	7854
Adelaide Wind Farm	7	13	6	2016	06/13/16	7854	7854	7854
Adelaide Wind Farm	11	13	6	2016	06/13/16	4500	4500	7854
Adelaide Wind Farm	12	13	6	2016	06/13/16	3000	3000	7854
Adelaide Wind Farm	14	13	6	2016	06/13/16	7854	7854	7854
Adelaide Wind Farm	19	13	6	2016	06/13/16	7854	7854	7854
Adelaide Wind Farm	20	13	6	2016	06/13/16	4500	4500	7854
Adelaide Wind Farm	22	13	6	2016	06/13/16	7854	7854	7854
Adelaide Wind Farm	17	13	6	2016	06/13/16	6500	6500	7854
Adelaide Wind Farm	6	20	6	2016	06/20/16	4000	4000	7854
Adelaide Wind Farm	7	20	6	2016	06/20/16	7854	7854	7854
Adelaide Wind Farm	11	20	6	2016	06/20/16	4500	4500	7854
Adelaide Wind Farm	12	20	6	2016	06/20/16	3000	3000	7854
Adelaide Wind Farm	14	20	6	2016	06/20/16	7854	7854	7854
Adelaide Wind Farm	17	20	6	2016	06/20/16	6500	6500	7854
Adelaide Wind Farm	19	20	6	2016	06/20/16	7854	7854	7854
Adelaide Wind Farm	22	20	6	2016	06/20/16	7854	7854	7854
Adelaide Wind Farm	20	20	6	2016	06/20/16	4500	4500	7854
Adelaide Wind Farm	6	23	6	2016	06/23/16	4000	4000	7854
Adelaide Wind Farm	7	23	6	2016	06/23/16	7854	7854	7854
Adelaide Wind Farm	11	23	6	2016	06/23/16	4500	4500	7854
Adelaide Wind Farm	12	23	6	2016	06/23/16	3000	3000	7854
Adelaide Wind Farm	14	23	6	2016	06/23/16	7854	7854	7854
Adelaide Wind Farm	17	23	6	2016	06/23/16	6500	6500	7854
Adelaide Wind Farm	19	23	6	2016	06/23/16	7854	7854	7854
Adelaide Wind Farm	20	23	6	2016	06/23/16	6500	6500	7854

Appendix F9: Percent Area Search Data

project_name	turbine_number	day	month	year	date	actual_area_searched_m2	actual_searched_capped_m2	total_area_for_survey
Adelaide Wind Farm	22	23	6	2016	06/23/16	7854	7854	7854
Adelaide Wind Farm	27	23	6	2016	06/23/16	7854	7854	7854
Adelaide Wind Farm	6	27	6	2016	06/27/16	3500	3500	7854
Adelaide Wind Farm	7	27	6	2016	06/27/16	7854	7854	7854
Adelaide Wind Farm	11	27	6	2016	06/27/16	7854	7854	7854
Adelaide Wind Farm	12	27	6	2016	06/27/16	4500	4500	7854
Adelaide Wind Farm	14	27	6	2016	06/27/16	3000	3000	7854
Adelaide Wind Farm	17	27	6	2016	06/27/16	6500	6500	7854
Adelaide Wind Farm	19	27	6	2016	06/27/16	7854	7854	7854
Adelaide Wind Farm	20	27	6	2016	06/27/16	7854	7854	7854
Adelaide Wind Farm	22	27	6	2016	06/27/16	7854	7854	7854
Adelaide Wind Farm	27	27	6	2016	06/27/16	7854	7854	7854
Adelaide Wind Farm	6	29	6	2016	06/29/16	3500	3500	7854
Adelaide Wind Farm	11	29	6	2016	06/29/16	7854	7854	7854
Adelaide Wind Farm	12	29	6	2016	06/29/16	4500	4500	7854
Adelaide Wind Farm	14	29	6	2016	06/29/16	3000	3000	7854
Adelaide Wind Farm	17	29	6	2016	06/29/16	6500	6500	7854
Adelaide Wind Farm	19	29	6	2016	06/29/16	7854	7854	7854
Adelaide Wind Farm	20	29	6	2016	06/29/16	7854	7854	7854
Adelaide Wind Farm	22	29	6	2016	06/29/16	7854	7854	7854
Adelaide Wind Farm	27	29	6	2016	06/29/16	7854	7854	7854
Adelaide Wind Farm	6	4	7	2016	07/04/16	3500	3500	7854
Adelaide Wind Farm	7	4	7	2016	07/04/16	7854	7854	7854
Adelaide Wind Farm	11	4	7	2016	07/04/16	7854	7854	7854
Adelaide Wind Farm	12	4	7	2016	07/04/16	4500	4500	7854
Adelaide Wind Farm	14	4	7	2016	07/04/16	3000	3000	7854
Adelaide Wind Farm	17	4	7	2016	07/04/16	6500	6500	7854
Adelaide Wind Farm	19	4	7	2016	07/04/16	7854	7854	7854
Adelaide Wind Farm	20	4	7	2016	07/04/16	7854	7854	7854
Adelaide Wind Farm	22	4	7	2016	07/04/16	7854	7854	7854
Adelaide Wind Farm	27	4	7	2016	07/04/16	7854	7854	7854
Adelaide Wind Farm	6	7	7	2016	07/07/16	3500	3500	7854
Adelaide Wind Farm	11	7	7	2016	07/07/16	6500	6500	7854
Adelaide Wind Farm	12	7	7	2016	07/07/16	4500	4500	7854
Adelaide Wind Farm	14	7	7	2016	07/07/16	4000	4000	7854
Adelaide Wind Farm	17	7	7	2016	07/07/16	6500	6500	7854
Adelaide Wind Farm	19	7	7	2016	07/07/16	6500	6500	7854
Adelaide Wind Farm	20	7	7	2016	07/07/16	7854	7854	7854
Adelaide Wind Farm	22	7	7	2016	07/07/16	7854	7854	7854
Adelaide Wind Farm	27	7	7	2016	07/07/16	7854	7854	7854
Adelaide Wind Farm	6	11	7	2016	07/11/16	3500	3500	7854
Adelaide Wind Farm	7	11	7	2016	07/11/16	7854	7854	7854
Adelaide Wind Farm	11	11	7	2016	07/11/16	6500	6500	7854
Adelaide Wind Farm	12	11	7	2016	07/11/16	4500	4500	7854
Adelaide Wind Farm	14	11	7	2016	07/11/16	4000	4000	7854
Adelaide Wind Farm	17	11	7	2016	07/11/16	6500	6500	7854
Adelaide Wind Farm	19	11	7	2016	07/11/16	6500	6500	7854

Appendix F9: Percent Area Search Data

project_name	turbine_number	day	month	year	date	actual_area_searched_m2	actual_searched_capped_m2	total_area_for_survey
Adelaide Wind Farm	27	11	7	2016	07/11/16	7854	7854	7854
Adelaide Wind Farm	6	14	7	2016	07/14/16	3500	3500	7854
Adelaide Wind Farm	7	14	7	2016	07/14/16	7854	7854	7854
Adelaide Wind Farm	11	14	7	2016	07/14/16	7854	7854	7854
Adelaide Wind Farm	12	14	7	2016	07/14/16	4500	4500	7854
Adelaide Wind Farm	6	18	7	2016	07/18/16	5000	5000	7854
Adelaide Wind Farm	11	18	7	2016	07/18/16	7500	7500	7854
Adelaide Wind Farm	12	18	7	2016	07/18/16	7000	7000	7854
Adelaide Wind Farm	14	18	7	2016	07/18/16	4000	4000	7854
Adelaide Wind Farm	17	18	7	2016	07/18/16	7500	7500	7854
Adelaide Wind Farm	19	18	7	2016	07/18/16	6500	6500	7854
Adelaide Wind Farm	20	18	7	2016	07/18/16	7854	7854	7854
Adelaide Wind Farm	22	18	7	2016	07/18/16	7854	7854	7854
Adelaide Wind Farm	27	18	7	2016	07/18/16	7854	7854	7854
Adelaide Wind Farm	6	21	7	2016	07/21/16	5000	5000	7854
Adelaide Wind Farm	7	21	7	2016	07/21/16	7854	7854	7854
Adelaide Wind Farm	11	21	7	2016	07/21/16	7500	7500	7854
Adelaide Wind Farm	12	21	7	2016	07/21/16	7000	7000	7854
Adelaide Wind Farm	14	21	7	2016	07/21/16	4000	4000	7854
Adelaide Wind Farm	17	21	7	2016	07/21/16	7500	7500	7854
Adelaide Wind Farm	19	21	7	2016	07/21/16	6500	6500	7854
Adelaide Wind Farm	20	21	7	2016	07/21/16	7854	7854	7854
Adelaide Wind Farm	22	21	7	2016	07/21/16	7854	7854	7854
Adelaide Wind Farm	27	21	7	2016	07/21/16	7854	7854	7854
Adelaide Wind Farm	6	26	7	2016	07/26/16	5000	5000	7854
Adelaide Wind Farm	7	26	7	2016	07/26/16	7854	7854	7854
Adelaide Wind Farm	11	26	7	2016	07/26/16	7000	7000	7854
Adelaide Wind Farm	12	26	7	2016	07/26/16	7000	7000	7854
Adelaide Wind Farm	14	26	7	2016	07/26/16	4000	4000	7854
Adelaide Wind Farm	17	26	7	2016	07/26/16	7000	7000	7854
Adelaide Wind Farm	20	26	7	2016	07/26/16	7854	7854	7854
Adelaide Wind Farm	22	26	7	2016	07/26/16	7854	7854	7854
Adelaide Wind Farm	6	29	7	2016	07/29/16	5000	5000	7854
Adelaide Wind Farm	7	29	7	2016	07/29/16	7854	7854	7854
Adelaide Wind Farm	11	29	7	2016	07/29/16	7000	7000	7854
Adelaide Wind Farm	12	29	7	2016	07/29/16	7000	7000	7854
Adelaide Wind Farm	14	29	7	2016	07/29/16	4000	4000	7854
Adelaide Wind Farm	17	29	7	2016	07/29/16	6600	6600	7854
Adelaide Wind Farm	19	29	7	2016	07/29/16	6000	6000	7854
Adelaide Wind Farm	20	29	7	2016	07/29/16	7854	7854	7854
Adelaide Wind Farm	22	29	7	2016	07/29/16	7854	7854	7854
Adelaide Wind Farm	27	29	7	2016	07/29/16	7854	7854	7854
Adelaide Wind Farm	6	2	8	2016	08/02/16	6000	6000	7854
Adelaide Wind Farm	7	2	8	2016	08/02/16	6500	6500	7854
Adelaide Wind Farm	11	2	8	2016	08/02/16	7854	7854	7854
Adelaide Wind Farm	12	2	8	2016	08/02/16	7000	7000	7854
Adelaide Wind Farm	14	2	8	2016	08/02/16	3000	3000	7854

Appendix F9: Percent Area Search Data

project_name	turbine_number	day	month	year	date	actual_area_searched_m2	actual_searched_capped_m2	total_area_for_survey
Adelaide Wind Farm	19	2	8	2016	08/02/16	5000	5000	7854
Adelaide Wind Farm	20	2	8	2016	08/02/16	5500	5500	7854
Adelaide Wind Farm	22	2	8	2016	08/02/16	6500	6500	7854
Adelaide Wind Farm	6	4	8	2016	08/04/16	6250	6250	7854
Adelaide Wind Farm	7	4	8	2016	08/04/16	6500	6500	7854
Adelaide Wind Farm	11	4	8	2016	08/04/16	7854	7854	7854
Adelaide Wind Farm	12	4	8	2016	08/04/16	7000	7000	7854
Adelaide Wind Farm	14	4	8	2016	08/04/16	3000	3000	7854
Adelaide Wind Farm	17	4	8	2016	08/04/16	6500	6500	7854
Adelaide Wind Farm	22	4	8	2016	08/04/16	6000	6000	7854
Adelaide Wind Farm	27	4	8	2016	08/04/16	6000	6000	7854
Adelaide Wind Farm	6	8	8	2016	08/08/16	6250	6250	7854
Adelaide Wind Farm	7	8	8	2016	08/08/16	6500	6500	7854
Adelaide Wind Farm	11	8	8	2016	08/08/16	7854	7854	7854
Adelaide Wind Farm	12	8	8	2016	08/08/16	7000	7000	7854
Adelaide Wind Farm	14	8	8	2016	08/08/16	3000	3000	7854
Adelaide Wind Farm	17	8	8	2016	08/08/16	6000	6000	7854
Adelaide Wind Farm	20	8	8	2016	08/08/16	5000	5000	7854
Adelaide Wind Farm	22	8	8	2016	08/08/16	5500	5500	7854
Adelaide Wind Farm	27	8	8	2016	08/08/16	6000	6000	7854
Adelaide Wind Farm	6	15	8	2016	08/15/16	5500	5500	7854
Adelaide Wind Farm	7	15	8	2016	08/15/16	6000	6000	7854
Adelaide Wind Farm	11	15	8	2016	08/15/16	7000	7000	7854
Adelaide Wind Farm	12	15	8	2016	08/15/16	6750	6750	7854
Adelaide Wind Farm	14	15	8	2016	08/15/16	3000	3000	7854
Adelaide Wind Farm	17	15	8	2016	08/15/16	5500	5500	7854
Adelaide Wind Farm	19	15	8	2016	08/15/16	4250	4250	7854
Adelaide Wind Farm	20	15	8	2016	08/15/16	5000	5000	7854
Adelaide Wind Farm	22	15	8	2016	08/15/16	4500	4500	7854
Adelaide Wind Farm	27	15	8	2016	08/15/16	4750	4750	7854
Adelaide Wind Farm	6	18	8	2016	08/18/16	6000	6000	7854
Adelaide Wind Farm	7	18	8	2016	08/18/16	6000	6000	7854
Adelaide Wind Farm	11	18	8	2016	08/18/16	7000	7000	7854
Adelaide Wind Farm	14	18	8	2016	08/18/16	3250	3250	7854
Adelaide Wind Farm	17	18	8	2016	08/18/16	5250	5250	7854
Adelaide Wind Farm	19	18	8	2016	08/18/16	4000	4000	7854
Adelaide Wind Farm	20	18	8	2016	08/18/16	5500	5500	7854
Adelaide Wind Farm	22	18	8	2016	08/18/16	4500	4500	7854
Adelaide Wind Farm	27	18	8	2016	08/18/16	5000	5000	7854
Adelaide Wind Farm	6	22	8	2016	08/22/16	6000	6000	7854
Adelaide Wind Farm	7	22	8	2016	08/22/16	6000	6000	7854
Adelaide Wind Farm	11	22	8	2016	08/22/16	7000	7000	7854
Adelaide Wind Farm	14	22	8	2016	08/22/16	3250	3250	7854
Adelaide Wind Farm	19	22	8	2016	08/22/16	3750	3750	7854
Adelaide Wind Farm	20	22	8	2016	08/22/16	6000	6000	7854
Adelaide Wind Farm	22	22	8	2016	08/22/16	4500	4500	7854
Adelaide Wind Farm	27	22	8	2016	08/22/16	5000	5000	7854

Appendix F9: Percent Area Search Data

project_name	turbine_number	day	month	year	date	actual_area_searched_m2	actual_searched_capped_m2	total_area_for_survey
Adelaide Wind Farm	6	26	8	2016	08/26/16	6250	6250	7854
Adelaide Wind Farm	7	26	8	2016	08/26/16	6000	6000	7854
Adelaide Wind Farm	12	26	8	2016	08/26/16	6750	6750	7854
Adelaide Wind Farm	14	26	8	2016	08/26/16	3250	3250	7854
Adelaide Wind Farm	19	26	8	2016	08/26/16	3750	3750	7854
Adelaide Wind Farm	20	26	8	2016	08/26/16	6500	6500	7854
Adelaide Wind Farm	22	26	8	2016	08/26/16	4500	4500	7854
Adelaide Wind Farm	27	26	8	2016	08/26/16	5000	5000	7854
Adelaide Wind Farm	6	29	8	2016	08/29/16	6500	6500	7854
Adelaide Wind Farm	7	29	8	2016	08/29/16	6000	6000	7854
Adelaide Wind Farm	11	29	8	2016	08/29/16	7000	7000	7854
Adelaide Wind Farm	12	29	8	2016	08/29/16	6750	6750	7854
Adelaide Wind Farm	14	29	8	2016	08/29/16	3250	3250	7854
Adelaide Wind Farm	17	29	8	2016	08/29/16	5000	5000	7854
Adelaide Wind Farm	19	29	8	2016	08/29/16	3500	3500	7854
Adelaide Wind Farm	20	29	8	2016	08/29/16	7000	7000	7854
Adelaide Wind Farm	22	29	8	2016	08/29/16	4500	4500	7854
Adelaide Wind Farm	27	29	8	2016	08/29/16	5000	5000	7854
Adelaide Wind Farm	6	1	9	2016	09/01/16	5500	5500	7854
Adelaide Wind Farm	12	1	9	2016	09/01/16	6500	6500	7854
Adelaide Wind Farm	14	1	9	2016	09/01/16	1600	1600	7854
Adelaide Wind Farm	19	1	9	2016	09/01/16	1750	1750	7854
Adelaide Wind Farm	20	1	9	2016	09/01/16	7850	7850	7854
Adelaide Wind Farm	22	1	9	2016	09/01/16	2175	2175	7854
Adelaide Wind Farm	27	1	9	2016	09/01/16	1300	1300	7854
Adelaide Wind Farm	7	1	9	2016	09/01/16	1050	1050	7854
Adelaide Wind Farm	7	6	9	2016	09/06/16	1125	1125	7854
Adelaide Wind Farm	6	6	9	2016	09/06/16	5875	5875	7854
Adelaide Wind Farm	11	6	9	2016	09/06/16	7475	7475	7854
Adelaide Wind Farm	12	6	9	2016	09/06/16	7100	7100	7854
Adelaide Wind Farm	14	6	9	2016	09/06/16	1375	1375	7854
Adelaide Wind Farm	17	6	9	2016	09/06/16	3150	3150	7854
Adelaide Wind Farm	19	6	9	2016	09/06/16	1550	1550	7854
Adelaide Wind Farm	20	6	9	2016	09/06/16	7750	7750	7854
Adelaide Wind Farm	22	6	9	2016	09/06/16	1675	1675	7854
Adelaide Wind Farm	27	6	9	2016	09/06/16	1175	1175	7854
Adelaide Wind Farm	7	8	9	2016	09/08/16	1125	1125	7854
Adelaide Wind Farm	12	8	9	2016	09/08/16	6250	6250	7854
Adelaide Wind Farm	14	8	9	2016	09/08/16	825	825	7854
Adelaide Wind Farm	20	8	9	2016	09/08/16	7650	7650	7854
Adelaide Wind Farm	27	8	9	2016	09/08/16	1550	1550	7854
Adelaide Wind Farm	22	8	9	2016	09/08/16	900	900	7854
Adelaide Wind Farm	17	8	9	2016	09/08/16	3575	3575	7854
Adelaide Wind Farm	19	8	9	2016	09/08/16	1550	1550	7854
Adelaide Wind Farm	11	8	9	2016	09/08/16	7450	7450	7854
Adelaide Wind Farm	6	8	9	2016	09/08/16	5625	5625	7854
Adelaide Wind Farm	7	12	9	2016	09/12/16	1075	1075	7854

Appendix F9: Percent Area Search Data

project_name	turbine_number	day	month	year	date	actual_area_searched_m2	actual_searched_capped_m2	total_area_for_survey
Adelaide Wind Farm	11	12	9	2016	09/12/16	7725	7725	7854
Adelaide Wind Farm	12	12	9	2016	09/12/16	7850	7850	7854
Adelaide Wind Farm	14	12	9	2016	09/12/16	975	975	7854
Adelaide Wind Farm	17	12	9	2016	09/12/16	3275	3275	7854
Adelaide Wind Farm	19	12	9	2016	09/12/16	1550	1550	7854
Adelaide Wind Farm	20	12	9	2016	09/12/16	7675	7675	7854
Adelaide Wind Farm	22	12	9	2016	09/12/16	950	950	7854
Adelaide Wind Farm	27	12	9	2016	09/12/16	1500	1500	7854
Adelaide Wind Farm	7	15	9	2016	09/15/16	1400	1400	7854
Adelaide Wind Farm	6	15	9	2016	09/15/16	5500	5500	7854
Adelaide Wind Farm	11	15	9	2016	09/15/16	6900	6900	7854
Adelaide Wind Farm	12	15	9	2016	09/15/16	7650	7650	7854
Adelaide Wind Farm	14	15	9	2016	09/15/16	900	900	7854
Adelaide Wind Farm	17	15	9	2016	09/15/16	3100	3100	7854
Adelaide Wind Farm	19	15	9	2016	09/15/16	1400	1400	7854
Adelaide Wind Farm	20	15	9	2016	09/15/16	7685	7685	7854
Adelaide Wind Farm	22	15	9	2016	09/15/16	1025	1025	7854
Adelaide Wind Farm	27	15	9	2016	09/15/16	1750	1750	7854
Adelaide Wind Farm	7	20	9	2016	09/20/16	1400	1400	7854
Adelaide Wind Farm	6	20	9	2016	09/20/16	1100	1100	7854
Adelaide Wind Farm	11	20	9	2016	09/20/16	7500	7500	7854
Adelaide Wind Farm	14	20	9	2016	09/20/16	1125	1125	7854
Adelaide Wind Farm	17	20	9	2016	09/20/16	3100	3100	7854
Adelaide Wind Farm	19	20	9	2016	09/20/16	1400	1400	7854
Adelaide Wind Farm	20	20	9	2016	09/20/16	7650	7650	7854
Adelaide Wind Farm	22	20	9	2016	09/20/16	1175	1175	7854
Adelaide Wind Farm	27	20	9	2016	09/20/16	1675	1675	7854
Adelaide Wind Farm	7	22	9	2016	09/22/16	1650	1650	7854
Adelaide Wind Farm	6	22	9	2016	09/22/16	1050	1050	7854
Adelaide Wind Farm	11	22	9	2016	09/22/16	7125	7125	7854
Adelaide Wind Farm	12	22	9	2016	09/22/16	5500	5500	7854
Adelaide Wind Farm	14	22	9	2016	09/22/16	1250	1250	7854
Adelaide Wind Farm	17	22	9	2016	09/22/16	3300	3300	7854
Adelaide Wind Farm	19	22	9	2016	09/22/16	1550	1550	7854
Adelaide Wind Farm	20	22	9	2016	09/22/16	5850	5850	7854
Adelaide Wind Farm	22	22	9	2016	09/22/16	900	900	7854
Adelaide Wind Farm	27	22	9	2016	09/22/16	1350	1350	7854
Adelaide Wind Farm	7	26	9	2016	09/26/16	1250	1250	7854
Adelaide Wind Farm	6	26	9	2016	09/26/16	1125	1125	7854
Adelaide Wind Farm	11	26	9	2016	09/26/16	7100	7100	7854
Adelaide Wind Farm	12	26	9	2016	09/26/16	5300	5300	7854
Adelaide Wind Farm	14	26	9	2016	09/26/16	1300	1300	7854
Adelaide Wind Farm	17	26	9	2016	09/26/16	3500	3500	7854
Adelaide Wind Farm	19	26	9	2016	09/26/16	1150	1150	7854
Adelaide Wind Farm	20	26	9	2016	09/26/16	6800	6800	7854
Adelaide Wind Farm	22	26	9	2016	09/26/16	1100	1100	7854
Adelaide Wind Farm	27	26	9	2016	09/26/16	2750	2750	7854

Appendix F9: Percent Area Search Data

project_name	turbine_number	day	month	year	date	actual_area_searched_m2	actual_searched_capped_m2	total_area_for_survey
Adelaide Wind Farm	7	29	9	2016	09/29/16	1430	1430	7854
Adelaide Wind Farm	6	29	9	2016	09/29/16	975	975	7854
Adelaide Wind Farm	11	29	9	2016	09/29/16	7625	7625	7854
Adelaide Wind Farm	12	29	9	2016	09/29/16	3700	7400	7854
Adelaide Wind Farm	14	29	9	2016	09/29/16	1450	1450	7854
Adelaide Wind Farm	17	29	9	2016	09/29/16	3275	3275	7854
Adelaide Wind Farm	19	29	9	2016	09/29/16	1180	1180	7854
Adelaide Wind Farm	20	29	9	2016	09/29/16	7200	7200	7854
Adelaide Wind Farm	22	29	9	2016	09/29/16	1850	1850	7854
Adelaide Wind Farm	27	29	9	2016	09/29/16	1650	1650	7854
Adelaide Wind Farm	6	3	10	2016	10/03/16	940	940	7854
Adelaide Wind Farm	7	3	10	2016	10/03/16	2375	2375	7854
Adelaide Wind Farm	11	3	10	2016	10/03/16	7325	7325	7854
Adelaide Wind Farm	20	3	10	2016	10/03/16	7600	7600	7854
Adelaide Wind Farm	27	3	10	2016	10/03/16	3350	3350	7854
Adelaide Wind Farm	22	3	10	2016	10/03/16	1700	1700	7854
Adelaide Wind Farm	19	3	10	2016	10/03/16	1475	1475	7854
Adelaide Wind Farm	17	3	10	2016	10/03/16	2875	2875	7854
Adelaide Wind Farm	14	3	10	2016	10/03/16	950	950	7854
Adelaide Wind Farm	7	6	10	2016	10/06/16	2100	2100	7854
Adelaide Wind Farm	6	6	10	2016	10/06/16	825	825	7854
Adelaide Wind Farm	11	6	10	2016	10/06/16	6925	6925	7854
Adelaide Wind Farm	12	6	10	2016	10/06/16	7375	7375	7854
Adelaide Wind Farm	14	6	10	2016	10/06/16	1075	1075	7854
Adelaide Wind Farm	12	6	10	2016	10/06/16	7375	7375	7854
Adelaide Wind Farm	14	6	10	2016	10/06/16	1075	1075	7854
Adelaide Wind Farm	17	6	10	2016	10/06/16	4100	4100	7854
Adelaide Wind Farm	19	6	10	2016	10/06/16	1125	1125	7854
Adelaide Wind Farm	20	6	10	2016	10/06/16	7650	7650	7854
Adelaide Wind Farm	22	6	10	2016	10/06/16	1875	1875	7854
Adelaide Wind Farm	27	6	10	2016	10/06/16	3800	3800	7854
Adelaide Wind Farm	7	11	10	2016	10/11/16	2275	2275	7854
Adelaide Wind Farm	6	11	10	2016	10/11/16	1075	1075	7854
Adelaide Wind Farm	11	11	10	2016	10/11/16	7500	7500	7854
Adelaide Wind Farm	27	11	10	2016	10/11/16	4125	4125	7854
Adelaide Wind Farm	22	11	10	2016	10/11/16	8050	7854	7854
Adelaide Wind Farm	20	11	10	2016	10/11/16	6980	6980	7854
Adelaide Wind Farm	12	11	10	2016	10/11/16	7100	7100	7854
Adelaide Wind Farm	14	11	10	2016	10/11/16	1125	1125	7854
Adelaide Wind Farm	17	11	10	2016	10/11/16	3100	3100	7854
Adelaide Wind Farm	19	11	10	2016	10/11/16	1575	1575	7854
Adelaide Wind Farm	7	13	10	2016	10/13/16	3850	3850	7854
Adelaide Wind Farm	6	13	10	2016	10/13/16	1100	1100	7854
Adelaide Wind Farm	11	13	10	2016	10/13/16	8165	7854	7854
Adelaide Wind Farm	20	13	10	2016	10/13/16	7075	7075	7854
Adelaide Wind Farm	22	13	10	2016	10/13/16	8200	7854	7854
Adelaide Wind Farm	27	13	10	2016	10/13/16	5840	5840	7854
Adelaide Wind Farm	12	13	10	2016	10/13/16	7300	7300	7854
Adelaide Wind Farm	14	13	10	2016	10/13/16	1180	1180	7854

Appendix F9: Percent Area Search Data

project_name	turbine_number	day	month	year	date	actual_area_searched_m2	actual_searched_capped_m2	total_area_for_survey
Adelaide Wind Farm	17	13	10	2016	10/13/16	3750	3750	7854
Adelaide Wind Farm	19	13	10	2016	10/13/16	1740	1740	7854
Adelaide Wind Farm	20	17	10	2016	10/17/16	7800	7800	7854
Adelaide Wind Farm	22	17	10	2016	10/17/16	7925	7854	7854
Adelaide Wind Farm	27	17	10	2016	10/17/16	7300	7300	7854
Adelaide Wind Farm	19	17	10	2016	10/17/16	1740	1740	7854
Adelaide Wind Farm	17	17	10	2016	10/17/16	3300	3300	7854
Adelaide Wind Farm	14	17	10	2016	10/17/16	4175	4175	7854
Adelaide Wind Farm	12	17	10	2016	10/17/16	5875	5875	7854
Adelaide Wind Farm	11	17	10	2016	10/17/16	7680	7680	7854
Adelaide Wind Farm	7	17	10	2016	10/17/16	4950	4950	7854
Adelaide Wind Farm	6	17	10	2016	10/17/16	1325	1325	7854
Adelaide Wind Farm	27	20	10	2016	10/20/16	7650	7650	7854
Adelaide Wind Farm	22	20	10	2016	10/20/16	7950	7854	7854
Adelaide Wind Farm	20	20	10	2016	10/20/16	7775	7775	7854
Adelaide Wind Farm	19	20	10	2016	10/20/16	1875	1875	7854
Adelaide Wind Farm	17	20	10	2016	10/20/16	3300	3300	7854
Adelaide Wind Farm	14	20	10	2016	10/20/16	4475	4475	7854
Adelaide Wind Farm	12	20	10	2016	10/20/16	6925	6925	7854
Adelaide Wind Farm	11	20	10	2016	10/20/16	7900	7854	7854
Adelaide Wind Farm	7	20	10	2016	10/20/16	5200	5200	7854
Adelaide Wind Farm	6	20	10	2016	10/20/16	1375	1375	7854
Adelaide Wind Farm	27	24	10	2016	10/24/16	7550	7550	7854
Adelaide Wind Farm	22	24	10	2016	10/24/16	7925	7854	7854
Adelaide Wind Farm	20	24	10	2016	10/24/16	7656	7656	7854
Adelaide Wind Farm	19	24	10	2016	10/24/16	1725	1725	7854
Adelaide Wind Farm	17	24	10	2016	10/24/16	3750	3750	7854
Adelaide Wind Farm	14	24	10	2016	10/24/16	3865	3865	7854
Adelaide Wind Farm	12	24	10	2016	10/24/16	7100	7100	7854
Adelaide Wind Farm	11	24	10	2016	10/24/16	7735	7735	7854
Adelaide Wind Farm	7	24	10	2016	10/24/16	5160	5160	7854
Adelaide Wind Farm	6	24	10	2016	10/24/16	1840	1840	7854
Adelaide Wind Farm	7	27	10	2016	10/27/16	6200	6200	7854
Adelaide Wind Farm	6	27	10	2016	10/27/16	2175	2175	7854
Adelaide Wind Farm	11	27	10	2016	10/27/16	7358	7358	7854
Adelaide Wind Farm	12	27	10	2016	10/27/16	7675	7675	7854
Adelaide Wind Farm	14	27	10	2016	10/27/16	3900	3900	7854
Adelaide Wind Farm	17	27	10	2016	10/27/16	4180	4180	7854
Adelaide Wind Farm	19	27	10	2016	10/27/16	1865	1865	7854
Adelaide Wind Farm	22	27	10	2016	10/27/16	806	806	7854
Adelaide Wind Farm	27	27	10	2016	10/27/16	7825	7825	7854

Appendix F10: Percent Area Searched Summary

project_name	year	season/month	treatment_group	month_start	month_end	search_area_shape	search_area_dimension	total_required_survey_area_m2	total_actual_area_searched_m2	percent_area_surveyed_Ps
Adelaide Wind Farm	2016	May	Subset	5	5	circular	50m radius, 100m by 100m	699006	676651	0.968018873
Adelaide Wind Farm	2016	June	Subset	6	6	circular	50m radius, 100m by 100m	573342	458479	0.799660587
Adelaide Wind Farm	2016	July	Subset	7	7	circular	50m radius, 100m by 100m	534072	441158	0.826027202
Adelaide Wind Farm	2016	August	Subset	8	8	circular	50m radius, 100m by 100m	549780	386312	0.702666521
Adelaide Wind Farm	2016	September	Subset	9	9	circular	50m radius, 100m by 100m	675444	293420	0.434410551
Adelaide Wind Farm	2016	October	Subset	10	10	circular	50m radius, 100m by 100m	612612	358193	0.584697982

Appendix F11: Weekly Monitoring Mortality Record

project_name	turbine_number	day	month	year	start_time	Precip	Wind-speed	Temp	species_name_common	species_name_scientific	species_code	sex	carcass_utm_zone	carcass_easting_nad83
Adelaide Wind Farm	12	2	5	2016	12:10	Rain	9	12	Red-tailed Hawk	*Buteo jamaicensis*	RTHA	n/a	17	447870
Adelaide Wind Farm	7	9	5	2016	10:40	Drizzle	17	14	Silver-haired Bat	*Lasionycteris noctivagans*	LANO	Female	17	449626
Adelaide Wind Farm	11	9	6	2016	11:45	None	17	15	Silver-haired Bat	*Lasionycteris noctivagans*	LANO	n/a	17	449160
Adelaide Wind Farm	20	4	7	2016	15:10	None	19	27	European Starling	*Sturnus vulgaris*	EUST	n/a	17	447203
Adelaide Wind Farm	20	26	7	2016	14:40	None	18	27	Hoary Bat	*Lasiurus cinereus*	LACI	Female	17	440242
Adelaide Wind Farm	11	29	7	2016	10:00	None	16	28	Big Brown Bat	*Eptesicus fuscus*	EPFU	Male	17	449180
Adelaide Wind Farm	14	2	8	2016	13:15	None	27	30	Hoary Bat	*Lasiurus cinereus*	LACI	n/a	17	447162
Adelaide Wind Farm	22	26	8	2016	15:00	Drizzle	20	27	Eastern Red Bat	*Lasiurus borealis*	LABO	Female	17	438322
Adelaide Wind Farm	20	20	9	2016	16:45	None	10	26	Turkey Vulture	*Cathartes aura*	TUVU	n/a	17	440222
Adelaide Wind Farm	11	26	9	2016	13:45	Light Rain	11	17	Red-tailed Hawk	Buteo jamaicensis	RTHA	n/a	17	449192
Adelaide Wind Farm	12	29	9	2016	11:35	None	26	16	Silver-haired Bat	*Lasionycteris noctivagans*	LANO	Male	17	447888
Adelaide Wind Farm	22	29	9	2016	14:30	None	26	16	Turkey Vulture	*Cathartes aura*	TUVU	n/a	17	438316
Adelaide Wind Farm	11	3	10	2016	13:10	Drizzle	10	20	Silver-haired Bat	*Lasionycteris noctivagans*	LANO	Male	17	449163
Adelaide Wind Farm	11	6	10	2016	11:55	None	10	22	Silver-haired Bat	*Lasionycteris noctivagans*	LANO	Male	17	449145
Adelaide Wind Farm	20	6	10	2016	14:50	None	10	22	Silver-haired Bat	*Lasionycteris noctivagans*	LANO	Female	17	440259
Adelaide Wind Farm	22	27	10	2016	15:05	Heavy Rain	10	4	Hoary Bat	*Lasiurus cinereus*	LACI	n/a	17	438323

Appendix F11: Weekly Monitoring Mortality Record

project_name	turbine_number	carcass_northing_nad83	dist_from_turbine_m	direction_from_turbine	carcass_condition	injuries	time_since_death_hours	substrate	visibility_class
Adelaide Wind Farm	12	4763320	41	S	Advanced	Unknown	>48	Grass	2
Adelaide Wind Farm	7	4762179	41	NW	Early	Broken wing	24	Dirt	1
Adelaide Wind Farm	11	4763628	10	NE	Moderate	Broken wing	48	Gravel	1
Adelaide Wind Farm	20	4764935	<1	N	Fresh	Broken neck	<24	Gravel	1
Adelaide Wind Farm	20	4765057	2	NE	Early	Broken wing	24	Gravel	1
Adelaide Wind Farm	11	4763608	32	SE	Fresh	None visible	24	Gravel	1
Adelaide Wind Farm	14	4764872	8	W	Moderate	Decapitated	48	Crops	2
Adelaide Wind Farm	22	4763208	16	E	Fresh	Broken neck	< 24	Gravel	1
Adelaide Wind Farm	20	4765231	32	W	Moderate	Cut in half	72	Grass	2
Adelaide Wind Farm	11	4763628	42	E	Advanced	Unknown	>72	Dirt	1
Adelaide Wind Farm	12	4763381	21	N	Early	None visible	48	Dirt	1
Adelaide Wind Farm	22	4763185	25	S	Advanced	None visible	>120	Soybean	2
Adelaide Wind Farm	11	4763617	25	SE	Fresh	None visible	24	Gravel	1
Adelaide Wind Farm	11	4763613	6	SW	Fresh	None visible	24	Stone	1
Adelaide Wind Farm	20	4765228	1	S	Fresh	None visible	24	Pavement	1
Adelaide Wind Farm	22	4763205	15	W	Advanced	None visible	>72	Gravel	1

Appendix F12: Raptor Incidental Mortality Record

project_name	turbine_number	day	month	year	start_time	Precip	Wind-speed	Temp	species_name_common	species_name_scientific	species_code	sex	carcass_utm_zone	carcass_easting_nad83
Adelaide Wind Farm	17	12	5	2016	n/a	Drizzle	20	16	Bobolink	*Dolichonyx oryzivorus*	BOBO	Male	17	444512
Adelaide Wind Farm	8	27	7	2016	11:05	None	15	31	Hoary Bat	*Lasiurus cinereus*	LACI	n/a	17	451177
Adelaide Wind Farm	18	29	7	2016	13:00	None	9	25	Hoary Bat	*Lasiurus cinereus*	LACI	Female	17	443791
Adelaide Wind Farm	21	28	9	2016	17:05	Heavy Rain	18	22	Silver-haired Bat	*Lasionycteris noctivagans*	LANO	n/a	17	439206

Appendix F12: Raptor Incidental Mortality Record

project_name	turbine_number	carcass_northing_ nad83	dist_from_ turbine_m	direction_from_ turbine	carcass_ condition	injuries	time_since_ death_hours	substrate	visibility_class	Survey Type
Adelaide Wind Farm	17	4765069	14	W	Scavenged	Unknown	>168	Grass	1	Found while Se trials being set up
Adelaide Wind Farm	8	4763397	28	E	Moderate	None visible	48	Shrubs	2	SAR Survey
Adelaide Wind Farm	18	4765062	4	W	Moderate	None Visible	48	Gravel	1	Found by maintenance staff
Adelaide Wind Farm	21	4763534	41	E	Complete	None visible	168+	Grass	2	SAR Survey

APPENDIX G: FIELD FORMS

Stantec

APPENDIX G1 FIELD FORMS (EEMP MORTALITY MONITORING)

Stantec

Stantec

Searcher Efficiency Record Form

Project No: 160961067 Project Name: Adelaide Wind Farm

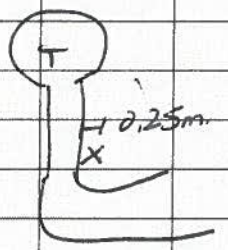
Date: May 12, 2016 Field Personnel: NashColville

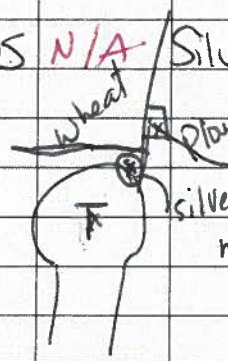
TESTER: M. Straus

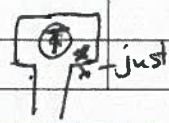
Weather Conditions: 15 (TEMP (°C)) | 19 km/h / S (WIND (speed / direction)) | 0 (CLOUD) | 0 (PPT) | 0 (PPT (last 24-hrs))

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Substrate	Visibility Class*	Detected?	Scavenged?
20	0850	500pm	AMRO	Thred	~~Frozen~~ Thawed	17	E 440210	N 4765223	43	S	Soil	2	☐-Y / ☑-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
17	0905	N/A	Silver Bat	"	"	17	E 444498	N 4765069	17m	NW	Soil	1	☑-Y / ☐-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
12	0930	N/A	Red Bat	"	"	17	E 447859	N 4763358	16	W	Soil	1	☑-Y / ☐-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N







PAGE 1 OF ___

Print Name & Initial: MAS. Melissa Straus (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Searcher Efficiency Record Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: May 16, 2016 Field Personnel: Nash Colville

TESTER: Sam Soehn

Weather Conditions: 5 (TEMP (°C)) 15 / NE (WIND (speed / direction)) 5% (CLOUD) None (PPT) Rain (PPT (last 24-hrs))

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed	UTM Coordinates			Position from turbine		Substrate	Visibility Class*	Detected?	Scavenged?
						Zone	Easting	Northing	Dist. (m)	Direction				
11	8:27	—	eastern red bat	thread	frozen	17T	E 449157	N 4763610	13	SE	access road	1	☐-Y / ☒-N	☒-Y / ☐-N
19	8:40	—	small bird	thread	frozen	17T	E 442931	N 4[illegible]64907	16	WNW	soil	1	☒-Y / ☐-N	☐-Y / ☒-N
22	8:54	—	silver haired bat	thread	frozen	17T	E 438286	N 4763222	27	NW	tilled soil	2	☐-Y / ☒-N	☒-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N

PAGE 1 OF 1

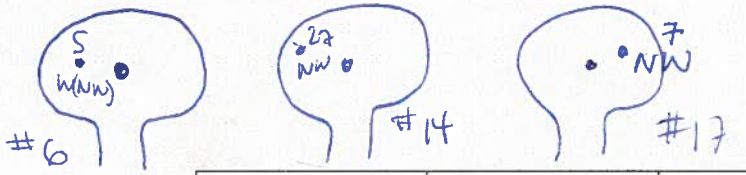
Print Name & Initial: Sam Soehn SS (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Searcher Efficiency Record Form



% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: May 30, 2016 Field Personnel: Nash Colville

TESTER: Sam Soehn

Weather Conditions: 20 (TEMP °C) | 10 / SE (WIND speed / direction) | 5 (CLOUD) | 0 (PPT) | light rain (PPT last 24-hrs)

Turbine No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Substrate	Visibility Class*	Detected?	Scavenged?
6	8:50	\	red bat	tagged	frozen	17T	E451970	N4762611	5	WNW	wheat	2	☐-Y / ☒-N	☒-Y / ☐-N
14	9:05	4:05	bird	sticker	frozen	17T	E447143	N4764868	27	NW	dead corn	2	☐-Y / ☒-N	☐-Y / ☒-N
17	9:15	\	hoary bat	tag	frozen	17T	E444504	N4765075	7	NW	soil	1	☒-Y / ☐-N	☐-Y / ☒-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N

Print Name & Initial: Sam Soehn SS (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Searcher Efficiency Record Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: June 2, 2016 Field Personnel: Nash Colville

TESTER: Anna Corrigan

Weather Conditions: 18C (TEMP (°C)) | 1km/h / SE (WIND (speed / direction)) | 60% (CLOUD) | 0 (PPT) | Rain (PPT (last 24-hrs))

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Substrate	Visibility Class*	Detected?	Scavenged?
7	7:45am.	4:30pm	AMRO	[redacted] Tag	Thawed	17	E 0449628	N 4762156	22	WNW	Dirt	1	☐-Y / ☑-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
17	8:10am	n/a	LACI	Threed	Thawed	17	E 0444500	N 4765056	4	NW	Weeds	2	☑-Y / ☐-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
27	8:30am	n/a	Rose-Breasted Grosbeak	[redacted] Tag	Thawed	17	E 0436009	N 4765474	45	E	Gravel	1	☑-Y / ☐-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N

Print Name & Initial: Anna Corrigan (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: MELISSA STRAUS (field notes QA/QC personnel)

Stantec

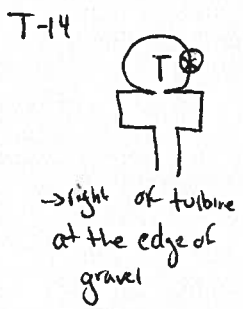
Searcher Efficiency Record Form

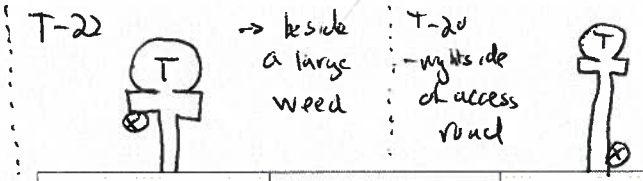
Project No: 160961067 Project Name: Adelaide Wind Farm

Date: June 6, 2016 Field Personnel: Nash Colville

TESTER: Anna Corrigan

Weather Conditions: 17°C (TEMP (°C)) | 16km/h / W (WIND (speed / direction)) | Ø (CLOUD) | Ø (PPT) | Thunderstorms (PPT (last 24-hrs))





% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Substrate	Visibility Class*	Detected?	Scavenged?
14	8:25am	3:00pm	Hoary Bat	Thread	Thawed	17	E 0447176	N 4764854	3	E	Weeds	2	☐-Y / ☑-N	☐-Y / ☑-N
							E	N	[illegible]	[illegible]			☐-Y / ☐-N	☐-Y / ☐-N
22	8:45am	n/a	Blue Jay	Tag [illegible]	Thawed	17	E 0438324	N 4763203	20	SE	dirt	1	☑-Y / ☐-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
20	9:00am	n/a	White-throated Sparrow	Tag [illegible]	Thawed	17	E 0440210	N 4765225	46	W	gravel	1	☑-Y / ☐-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N

Print Name & Initial: Anna Corrigan AC (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: MELISSA STRAUS MAS (field notes QA/QC personnel)

Stantec

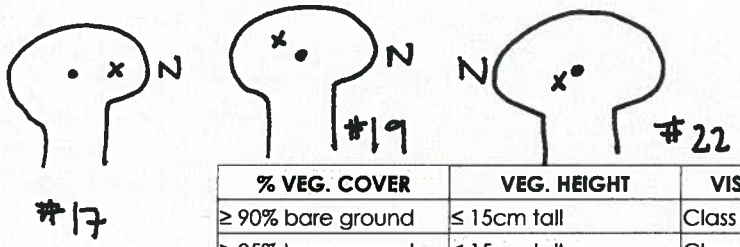
Searcher Efficiency Record Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: June 13, 2016 Field Personnel: Nash Colville

TESTER: Sam Soehn

Weather Conditions: 15 (TEMP (°C)) | 15 / SW (WIND (speed / direction)) | 30% (CLOUD) | None (PPT) | None (PPT (last 24-hrs))



% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed	UTM Coordinates			Position from turbine		Substrate	Visibility Class*	Detected?	Scavenged?
						Zone	Easting	Northing	Dist. (m)	Direction				
17	8:45	N/A	grey+white bird	tag	thawed	17T	E444504	N4765102	33	N	soy	2	☐-Y / ☒-N	☒-Y / ☐-N
19	9:00	N/A	Eastern red bat	tag	thawed	17T	E442935	N4764957	17	SW	soy + dirt	1	☒-Y / ☐-N	☐-Y / ☒-N
22	9:15	N/A	Big brown bat	tag	thawed	17T	E438821	N4763198	13	NW	gravel (access road)	1	☒-Y / ☐-N	☐-Y / ☒-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N

PAGE 1 OF 1

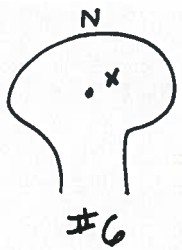
Print Name & Initial: Sam Soehn Sam Soehn (field notes author)

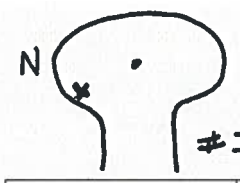
Quality Control: This form is complete ☑ & legible ☑

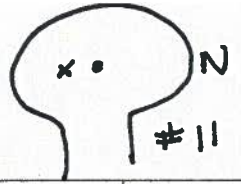
Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Searcher Efficiency Record Form







% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: June 16, 2016 Field Personnel: Nash Colville

TESTER: Sam Soehn

Weather Conditions: 16 (TEMP (°C)) | 15 / NW (WIND (speed / direction)) | 90% (CLOUD) | None (PPT) | Rain (PPT (last 24-hrs))

↳ thunderstorm shortly after SE placements

Turbine No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Substrate	Visibility Class*	Detected?	Scavenged?
6	6:15	MONDAY JUNE 20	Bird	tag	thawed	17T	E451983	N4762616	4	NE	weeds	2	☑-Y / ☒-N	☐-Y / ☒-N
7	6:25	n/a	Bird	tag	thawed	17T	E449629	N4762180	45	NW	soy	2	☐-Y / ☒-N	☒-Y / ☐-N
11	6:35	MONDAY JUNE 20	Big brown Bat	tag	thawed	17T	E449148	N4763614	7	S	weeds	2	☑-Y / ☒-N	☐-Y / ☒-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
	[redacted]	Didn't search Thursday due to thunderstorms, Searched Monday (June 20th)					E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N

Print Name & Initial: Sam Soehn SS (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Carrigan (field notes QA/QC personnel)

Stantec

Searcher Efficiency Record Form

Project No: 160961067 Project Name: Adelaide Windfarm

Date: June 20, 2016 Field Personnel: Nash Colville

TESTER: Brennan Obermayer

Weather Conditions: 18–26 | 10 / NW | 50 | 0 | 0

(TEMP (°C) | WIND (speed / direction) | CLOUD | PPT | PPT (last 24-hrs))

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Substrate	Visibility Class*	Detected?	Scavenged?
14	8:22	n/a	E. Red Bat	grass	frozen	17T	E 0447216	N 4764833	39.3	SE	weeds	2	☐-Y / ☒-N	☒-Y / ☐-N
19	8:38	4:45	↓	throat	↓	↓	E 0442967	N 4764983	25.6	NE	soil/weeds	2	☐-Y / ☒-N	☐-Y / ☒-N
22	08:52	n/a	Puma	[illegible]	↓	↓	E 0438289	N 4763216	19.2	NW	young [illegible]	2	☐-Y / ☒-N	☒-Y / ☐-N
				→tail			E	N			↓		☐-Y / ☐-N	☐-Y / ☐-N
							E	N			young bears.		☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
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							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N

PAGE 1 OF 1

Print Name & Initial: Brennan Obermayer (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Searcher Efficiency Record Form

Project No: 160960067 Project Name: Adelaide

Date: June 24, 2016 Field Personnel: Nash Colvile

TESTER: Brennan Obermayer

Weather Conditions: 28 (TEMP (°C)) | S, W (WIND (speed / direction)) | 15 (CLOUD) | 0 (PPT) | rain (altitude) (PPT (last 24-hrs))

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Substrate	Visibility Class*	Detected?	Scavenged?
7	07:58	n/a	bat	thread	frozen	17T	E 0449649	N 4762134	15.1	SW	Soil/veg	2	☒-Y / ☐-N	☒-Y / ☐-N
19	08:20	n/a	AMRO	[illegible] tape	frozen	↓	E 0447170	N 4764823	29.3	S	Grass	2	☐-Y / ☒-N	☐-Y / ☒-N
22	08:40	5:00	H. Bat	thread	frozen	↓	E 0448318	N 4763191	17.9	S	Beans	2	☐-Y / ☒-N	☐-Y / ☒-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N

PAGE 1 OF 1

Print Name & Initial: Brennan Obermayer BO (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Searcher Efficiency Record Form

Project No: 160961067 Project Name: Adelaide

Date: July 4, 2016 Field Personnel: Nash Christie

TESTER: Brennan Obermayer

Weather Conditions: 17 (TEMP (°C)) 5 15E (WIND (speed / direction)) 0 (CLOUD) 6 (PPT) 0 (PPT (last 24-hrs))

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Substrate	Visibility Class*	Detected?	Scavenged?
7	07:55	1700	BBUJ	[illegible] tape	frozen	17T	E 0449622	N 4762154	33.6	NW	soil/short corn	2	☐-Y / ☒-N	☐-Y / ☒-N
14	08:10	1715	Bat	[illegible] thread	frozen	17T	E 0447144	N 4764827	30.7	SW	soil	1	☐-Y / ☒-N	☐-Y / ☒-N
19	08:25	n/a [illegible]	Veery	Grass	frozen	17T	E 0442485	N 4764936	46.4	SE	Grass	2	☐-Y / ☒-N	☒-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N

Print Name & Initial: Brennan Obermayer BO (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan AC (field notes QA/QC personnel)

Stantec Consulting Ltd.
1 - 70 Southgate Drive,
Guelph ON N1G 4P5

Searcher Efficiency Record Form

Project No: 160961067 Project Name: Adelaide Wind Farm
Date: July 11, 2016 Field Personnel: Nash Colville
TESTER: Anna Corrigan

Weather Conditions: 19-21 (TEMP (°C)) | 8km/h SE (WIND) | 95% (CLOUD) | 0 (PPT) | 0 (PPT (last 24-hrs))

T-7

-> 3 steps north of stairs

T-11

T-14

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Substrate	Visibility Class*	Detected?	Scavenged?
T-7	8:20am	n/a	LANO	Thread	Thawed	17	0449658	4762152	4	NW	weeds	2	☑-Y / ☐-N	☐-Y / ☑-N
													☐-Y / ☐-N	☐-Y / ☐-N
T-11	8:30am	n/a	ROPI	Thread	Thawed	17	0449184	4763610	38	ESE	gravel	1	☑-Y / ☐-N	☐-Y / ☑-N
										[redacted]			☐-Y / ☐-N	☐-Y / ☐-N
T-14	8:45am	n/a	LACI	Thread	Thawed	17	0447170	4764830	24	S	gravel	1	☑-Y / ☐-N	☐-Y / ☑-N
													☐-Y / ☐-N	☐-Y / ☐-N
													☐-Y / ☐-N	☐-Y / ☐-N
													☐-Y / ☐-N	☐-Y / ☐-N
													☐-Y / ☐-N	☐-Y / ☐-N
													☐-Y / ☐-N	☐-Y / ☐-N
													☐-Y / ☐-N	☐-Y / ☐-N
													☐-Y / ☐-N	☐-Y / ☐-N
													☐-Y / ☐-N	☐-Y / ☐-N
													☐-Y / ☐-N	☐-Y / ☐-N
													☐-Y / ☐-N	☐-Y / ☐-N
													☐-Y / ☐-N	☐-Y / ☐-N
													☐-Y / ☐-N	☐-Y / ☐-N
													☐-Y / ☐-N	☐-Y / ☐-N
													☐-Y / ☐-N	☐-Y / ☐-N
													☐-Y / ☐-N	☐-Y / ☐-N

PAGE 1 OF 1

Print Name & Initial: Anna Corrigan AC (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: MELISSA STRAUS MLHS (field notes QA/QC personnel)

Stantec

Searcher Efficiency Record Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: July 21, 2016 Field Personnel: Anna Corrigan testing Akash Colville

TESTER: A. Corrigan

Weather Conditions: 18°C (TEMP (°C)) 5-8km/h / S (WIND (speed / direction)) 10% (CLOUD) ⊘ (PPT) ⊘ (PPT (last 24-hrs))

T-6

-> by a yellow post

T-19 -> beside an old pink flag

T-12

- on top of large rock

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Substrate	Visibility Class*	Detected?	Scavenged?
6	7:10am	n/a	GRCA	Thread	Thawed	17	E 0451938	N 4762715	4	W	weeds/dirt	2	☑-Y / ☐-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
19	7:30am	n/a	BAOR	[illegible] -> Thread	Thawed	17	E 0442988	N 4764976	40	ENE	dirt	1	☑-Y / ☐-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
12	7:45am	n/a	LAC1	Thread	Thawed	17	E 0447849	N 4763363	24	WNW	rock	1	☑-Y / ☐-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N

PAGE 1 OF 1

Print Name & Initial: Anna Corrigan (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: MELISSA STRAUS MAS. (field notes QA/QC personnel)

Stantec

Searcher Efficiency Record Form

Project No: 160960607 Project Name: Adelaide

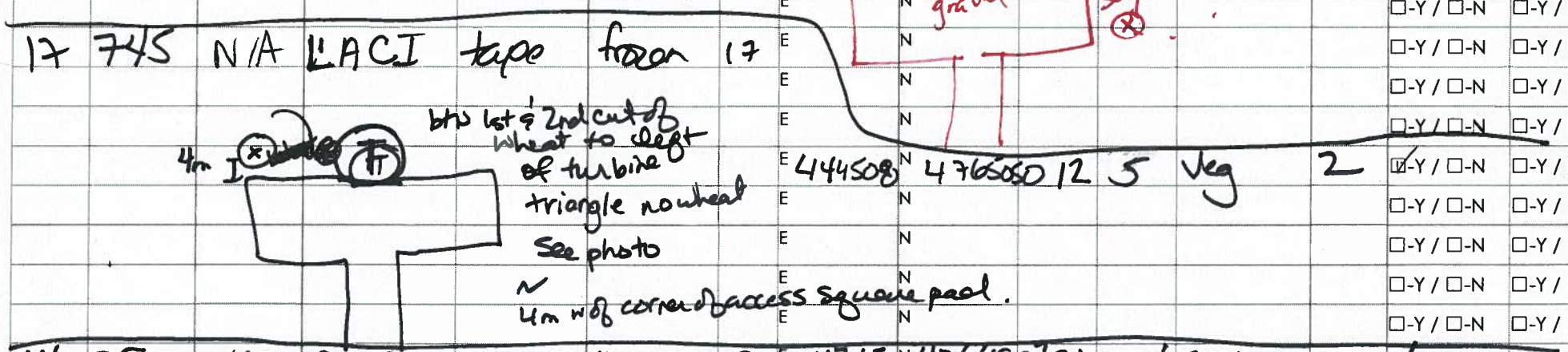
Date: July 29/16 Field Personnel: Beige tested Nash Colville.

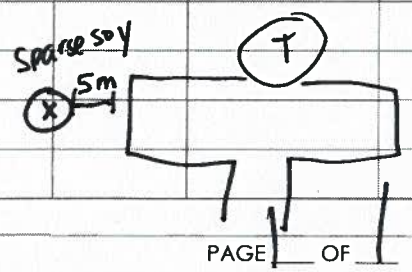
TESTER: M. Straus

Weather Conditions: 18 (TEMP (°C)) 5 / NE (WIND (speed / direction)) 40 (CLOUD) 0 (PPT) Rain? (PPT (last 24-hrs))

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Substrate	Visibility Class*	Detected?	Scavenged?
7	7:10	N/A	GRCA	~~thread~~ tag from ROM	frozen	17	E 449644	N 4762126	20	SW	Soil	2	☑-Y / ☐-N	☐-Y / ☑-N
			3m edge of gravel pad 3m east of corner of gravel pad				E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
17	745	N/A	LACI	tape	frozen	17	E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E 444508	N 4765050	12	S	Veg	2	☑-Y / ☐-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
14	755	N/A	GRCA	tag	"	17	E 447151	N 4764883	21	WSW	Soil	1	☑-Y / ☐-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N





PAGE ___ OF ___

Print Name & Initial: M Straus (field notes author)

Quality Control: This form is complete ☑ & legible ☑

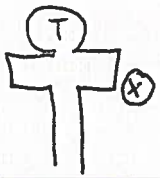
Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Searcher Efficiency Record Form

T-17

T-20



T-27

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: Aug 8, 2016 Field Personnel: Nash Colville

TESTER: Anna Corrigan

Weather Conditions: 17-19 (TEMP (°C)) 4-5 / E (km/h WIND (speed / direction)) 5% (CLOUD) Ø (PPT) Ø (PPT (last 24-hrs))

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Substrate	Visibility Class*	Detected?	Scavenged?
17	8:15 am	17:30	HOLA	Thread	Thawed	17	E0444514	N4765068	5	E	short veg	2	☐-Y / ☑-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
20	8:30am	n/a	CEDW	11	Thawed	17	E0440241	N4765210	19	SW	grass	2	☑-Y / ☐-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
27	8:50am	n/a	LABO	11	Thawed	17	E0436002	N4765466	42	ESE	grass	2	☑-Y / ☐-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N

PAGE 1 OF 1

Print Name & Initial: Anna Corrigan (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: MELISSA STRAUS MAS. (field notes QA/QC personnel)

Stantec

Searcher Efficiency Record Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: Aug 11/16 Field Personnel: Anna Corrigan testing

TESTER: Anna Corrigan Nash Colville

Weather Conditions: 21°C (TEMP (°C)) 3km/h / E (WIND (speed / direction)) 100% (CLOUD) Fog (PPT) Fog (PPT (last 24-hrs))

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Substrate	Visibility Class*	Detected?	Scavenged?
6	8:20am	n/a	LACI	Black Thread	Thawed	17	E 0451998	N 4762584	24	SE	mowed what	2	☐-Y / ☒-N	☒-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
11	8:35am	n/a	LANO	Black Thread	Thawed	17	E 0449190	N 4763624	40	W	dirt	1	☐-Y / ☒-N	☒-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
12	8:50am	n/a	SAVS	Black Thread	Thawed	17	E 0447883	N 4763364	6	NE	gravel	1	☐-Y / ☒-N	☒-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N

PAGE 1 OF 1

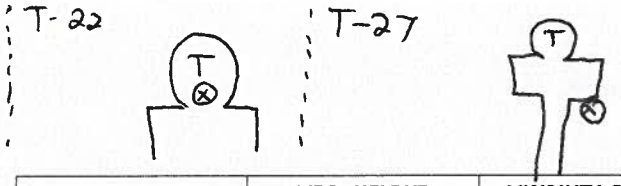
Print Name & Initial: Anna Corrigan AC (field notes author)

Quality Control: This form is complete ☐ & legible ☐

Print Name & Initial: Dana STRAUS DMS (field notes QA/QC personnel)

Stantec

Searcher Efficiency Record Form



Project No: 160961067 Project Name: Adelaide Wind Farm

Date: Aug 18, 2016 Field Personnel: Nash Colville

TESTER: Anna Corrigan

Weather Conditions: 20 (TEMP (°C)) | 2km/h / N (WIND (speed / direction)) | 10% (CLOUD) | Ø (PPT) | Thunderstorms / Fog (PPT (last 24-hrs))

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Substrate	Visibility Class*	Detected?	Scavenged?
20	8:15am	n/a	AMRO	[redacted] Tag	Thawed	17	E 0440259	N 4765236	8	NE	grass	2	☑-Y / ☐-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
22	8:35am	15:45	BCKI	[redacted] Tag	Thawed	17	E 0438316	N 4763208	1	E	gravel	1	☐-Y / ☑-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
27	8:55am	n/a.	LANO	[redacted] Thread	Thawed	17	E 0435980	N 4765479	23	NE	dirt	1	☑-Y / ☐-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N

PAGE 1 OF 1

Print Name & Initial: Anna Corrigan (field notes author)

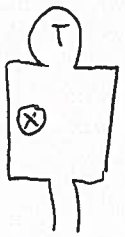
Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: MELISSA STRAUS MAS (field notes QA/QC personnel)

Stantec

Searcher Efficiency Record Form

T-11



T-12

T-22

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: Aug 22/16 Field Personnel: Anna Corrigan, Nash Colville

TESTER: Anna Corrigan

Weather Conditions: 13-16°C (TEMP (°C)) | 5 km/h / S (WIND (speed / direction)) | 50% (CLOUD) | 0 (PPT) | Heavy Rain. (PPT (last 24-hrs))

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Substrate	Visibility Class*	Detected?	Scavenged?
11	8:15am	4:30pm	LACI	[redacted] Thread	Frozen	17	E 0449163	N 4763607	20	SE	gravel	1	☐-Y / ☒-N	☐-Y / ☒-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
~~12~~	~~8:25am~~	~~n/a~~	~~RTHA~~	~~Black Thread~~	~~Frozen~~	~~17~~	~~E 0447824~~	~~N 4763383~~	~~48~~	~~W~~	~~gravel~~	~~1~~	~~☐-Y / ☒-N~~	~~☐-Y / ☒-N~~
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
22	8:45am	4:45pm	LACI	[redacted] Thread	Frozen	17	E 0438308	N 4763216	3	NW	weeds	2	☐-Y / ☒-N	☐-Y / ☒-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
→ Nash was unable to survey this turbine because of maintenance *							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N

Print Name & Initial: Anna Corrigan AC (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: MELISSA STRAUS MAS (field notes QA/QC personnel)

Stantec

Searcher Efficiency Record Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: Aug 29/16 Field Personnel: Nash Colville

TESTER: Anna Corrigan

Weather Conditions: 18°C (TEMP (°C)) | 6km/h / N (WIND (speed / direction)) | 5% (CLOUD) | 0 (PPT) | Fog (PPT (last 24-hrs))

T-7

T-6

T-11

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Substrate	Visibility Class*	Detected?	Scavenged?
7	7:40am	n/a	RTHA	Thread	Frozen	17	E 0449633	N 4762198	29	W	gravel	1	☑-Y / ☐-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
6	7:55am	n/a	LACI	Thread	Frozen	17	E 0451980	N 4762596	15	SW	grass	2	☑-Y / ☐-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
11	8:05am	n/a	LACI	Thread	Frozen	17	E 0449190	N 4763612	48	E	gravel	1	☑-Y / ☐-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N

Print Name & Initial: Anna Corrigan (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: MELISSA STRAUS MAS (field notes QA/QC personnel)

Stantec

Searcher Efficiency Record Form

T-12

T-17

T-27

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: Sept 12, 2016 Field Personnel: Dan DiLario

TESTER: Anna Corrigan

Weather Conditions: 9 (TEMP (°C)) 3.5 km/h / S (WIND (speed / direction)) 20% (CLOUD) Ø (PPT) Ø (PPT (last 24-hrs))

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Substrate	Visibility Class*	Detected?	Scavenged?
12	8:00am	n/a	Hoary Bat	Thread	Thawed	17	E 0447866	N 4763368	15	NW	gravel	1	☑-Y / ☐-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
17	8:15am	6:00pm	Savannah Sparrow	Tag	Thawed	17	E 0444522	N 4765050	20	SE	grass	2	☐-Y / ☑-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
27	8:30am	5:45pm	Hoary Bat	Thread	Thawed	17	E 0435961	N 4765470	0.25	W	cement	1	☐-Y / ☑-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N

Print Name & Initial: Anna Corrigan (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: MELISSA STRAUS MAS (field notes QA/QC personnel)

Stantec

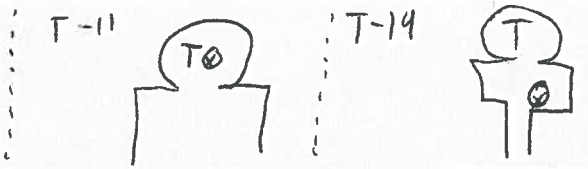
Searcher Efficiency Record Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: Sept 15/16 Field Personnel: Dan Dilario

TESTER: Anna Corrigan

Weather Conditions: 13°C (TEMP (°C)) 9km/h / F (WIND (speed / direction)) 3% (CLOUD) Ø (PPT) Ø (PPT (last 24-hrs))



% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Substrate	Visibility Class*	Detected?	Scavenged?
~~06~~	8:10am	n/a	LACI	Thread	Thawed	17	E 0451993	N 4762598	20	SE	grass	2	☑-Y / ☐-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
11	8:25am	n/a	Wilson's Warbler	Thread	Thawed	17	E 0449152	N 4763625	1	N	gravel	1	☑-Y / ☐-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
19	8:40am	n/a	Peregrine falcon	Thread	Thawed	17	E 0442979	N 4764972	31	NE	weeds	2	☑-Y / ☐-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N

Print Name & Initial: Anna Corrigan AC (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: MELISSA STRAUS MAS. (field notes QA/QC personnel)

Stantec

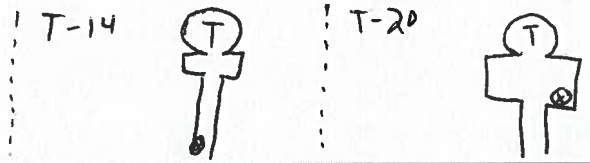
Searcher Efficiency Record Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: Sept 22, 2016 Field Personnel: Dan Dilario

TESTER: Anna Corrigan

Weather Conditions: 14°C (TEMP (°C)) | 4Km/h / SE (WIND (speed / direction)) | 20% (CLOUD) | Fog (PPT) | 0 (PPT (last 24-hrs))



% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Substrate	Visibility Class*	Detected?	Scavenged?
7	8:00am	17:00	Eastern Red Bat	Thread	Thawed	17	E 0449650	N 4762146	5	W	gravel/weeds	2	☐-Y / ☑-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
14	8:10am	17:15	Hoary Bat	Thread	Thawed	17	E 0447169	N 4764800	49	S	gravel	1	☐-Y / ☑-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
20	8:25am	n/a	Yellow-Bellied Sapsucker	Thread	Thawed	17	E 0446242	N 4765220	14	SW	gravel	1	☑-Y / ☐-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N

Print Name & Initial: Anna Corrigan (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: MELISSA STRAUS MAS (field notes QA/QC personnel)

Stantec

Searcher Efficiency Record Form

Project No: 160961067 Project Name: Adelaide Wind Farm

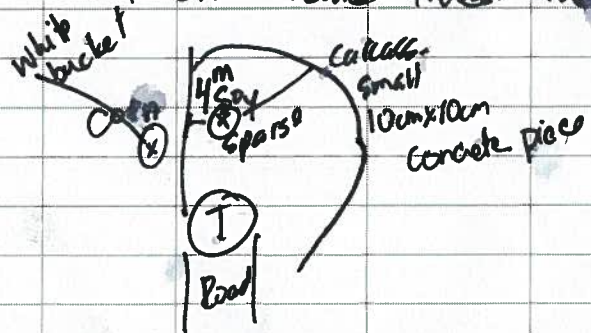
Date: Sept 26/16 Field Personnel: CA Straus testing Dan DiLorio

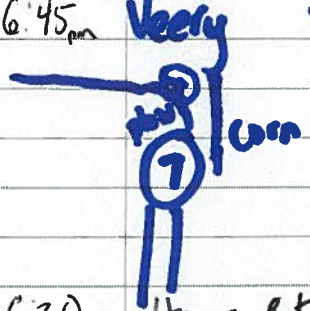
TESTER:

Weather Conditions: TEMP (°C) 17°C | WIND (speed / direction) 25 / E | CLOUD 80-100% | PPT light rain | PPT (last 24-hrs) Rain

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

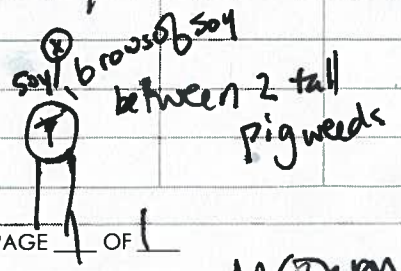
Turbine No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Substrate	Visibility Class*	Detected?	Scavenged?
7	750	7:00pm	Silver-haired	thread	thawed	17	E449686	N4762135	29	E	soil	2	☐-Y / ☑-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
17	815	6:45pm	Veery	thread	thaw	17	E444455	N4765807	10	N	Veg	2	☐-Y / ☑-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
22	835	6:30pm	Hoary Bat	thread	thawed	17	E438296	N4763207	10	S	Veg/Soil	2	☐-Y / ☑-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N





17 815 6:45pm Veery thread thaw 17 E444455 N4765807 10 N Veg 2

into plow + not clump of dirt 5m off pad behind turbine



PAGE 1 OF 1

Print Name & Initial: MSTraus (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

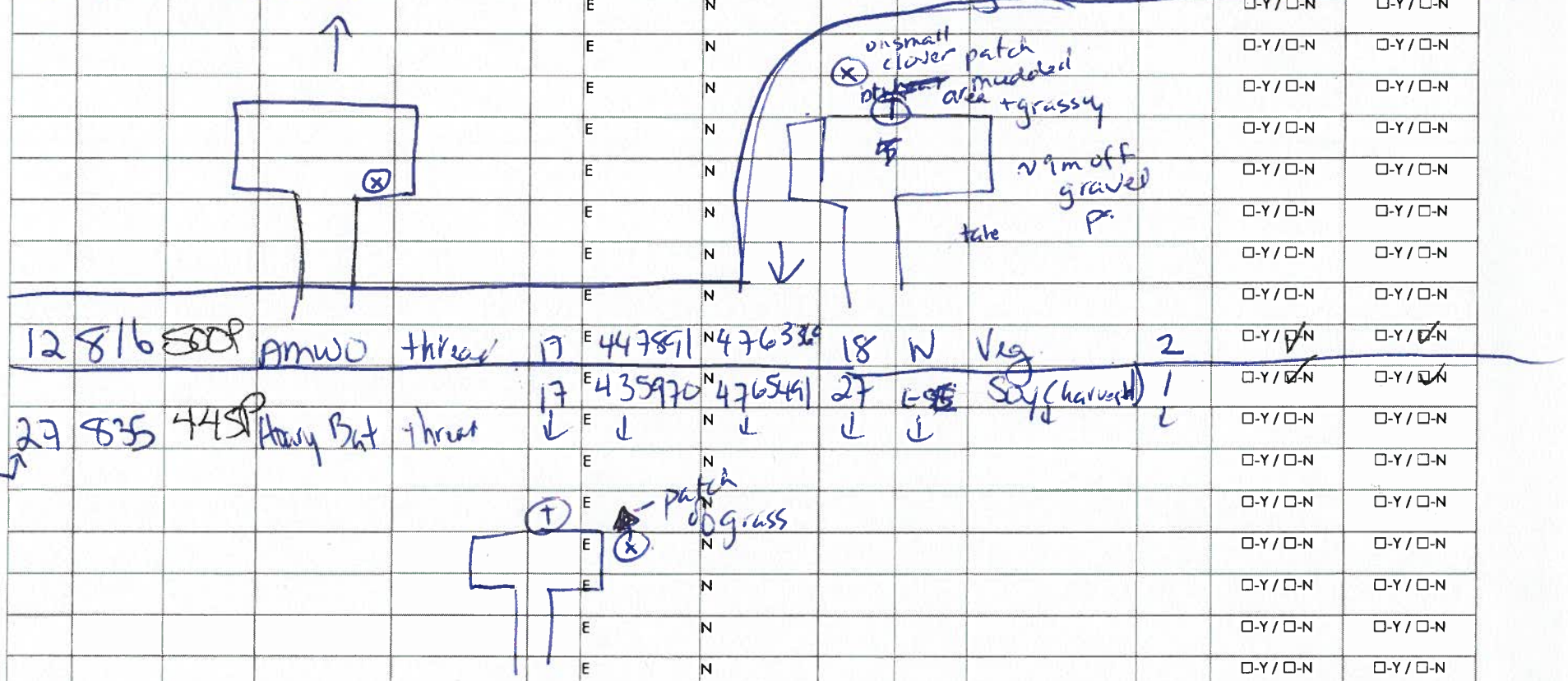
Searcher Efficiency Record Form

Project No: 160961067 Project Name: Adelaide
Date: October 13/16 Field Personnel: Dan DiLallo
TESTER: MStrauss

Weather: on placement date	TEMP (°C)	WIND speed/direction	CLOUD	PPT	PPT (last 24-hrs)
	11	21 / NW	30	0	Rain.

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Time Placed HH:mm	Time Collected HH:mm	Species	Marker Used	UTM Coordinates Zone	Easting	Northing	Position from Turbine Dist. (m)	Direction	Substrate	Visib. Class*	Detected?	Scavenged?
6	9:02	n/a	SCKI	thread	17T	E 451990	N 4762592	18	SE	gravel	1	☑-Y / ☐-N	☐-Y / ☑-N
						E	N					☐-Y / ☐-N	☐-Y / ☐-N
						E	N					☐-Y / ☐-N	☐-Y / ☐-N
						E	N					☐-Y / ☐-N	☐-Y / ☐-N
						E	N					☐-Y / ☐-N	☐-Y / ☐-N
						E	N					☐-Y / ☐-N	☐-Y / ☐-N
						E	N					☐-Y / ☐-N	☐-Y / ☐-N
						E	N					☐-Y / ☐-N	☐-Y / ☐-N
						E	N					☐-Y / ☐-N	☐-Y / ☐-N
12	8:16	8:08	AMWO	thread	17	E 447851	N 4763326	18	W	Veg	2	☐-Y / ☑-N	☐-Y / ☑-N
27	8:35	4:45P	Hoary Bat	thread	17	E 435970	N 4765491	27	E-SE	Soy (harvested)	1	☐-Y / ☑-N	☐-Y / ☑-N
						E	N					☐-Y / ☐-N	☐-Y / ☐-N
						E	N					☐-Y / ☐-N	☐-Y / ☐-N
						E	N					☐-Y / ☐-N	☐-Y / ☐-N
						E	N					☐-Y / ☐-N	☐-Y / ☐-N
						E	N					☐-Y / ☐-N	☐-Y / ☐-N
						E	N					☐-Y / ☐-N	☐-Y / ☐-N



initially arrested.

PAGE 1 OF 1

Print Name & Initial: MStrauss (field notes author)

Quality Control: This form is complete ☐ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Searcher Efficiency Record Form

Project No: 160961067 Project Name: Adelaide Wind Farm

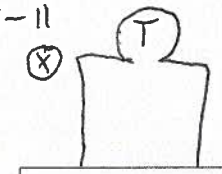
Date: Oct 17, 2016 Field Personnel: Dan D'Iorio

TESTER: Anna Corrigan

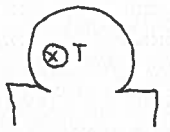
Weather Conditions: 17-19°C (TEMP (°C)) | 8 km/h / SE (WIND (speed / direction)) | 100% (CLOUD) | Fog (PPT) | Rain (PPT (last 24-hrs))

T-6

T-11



T-14



→ between turbine and yellow pole

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Substrate	Visibility Class*	Detected?	Scavenged?
6	8:15am	17:00	Hoary Bat	Thread	Thawed	17	E 0451976	N 4762569	46	S	clover grass	2	☐-Y / ☑-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
11	8:30am	16:45	Sharp-shinned Hawk	Thread	Thawed	17	E 0449156	N 4763595	24	SE	soy	2	☐-Y / ☑-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
14	8:40am	n/a	Common Redpoll	Thread	Thawed	17	E 0447166	N 4764852	2	W	gravel	1	☑-Y / ☐-N	☐-Y / ☑-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N

Print Name & Initial: Anna Corrigan AC (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: MELISSA STRAUS MAS (field notes QA/QC personnel)

Stantec

Searcher Efficiency Record Form

T-22

T-19

T-12

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: Oct 20, 2016 Field Personnel: Dan DiIorio

TESTER: Anna Corrigan

Weather Conditions: 6°C (TEMP (°C)) | 6km/h / E (WIND (speed / direction)) | 100% (CLOUD) | Rain (PPT) | Rain / Fog (PPT (last 24-hrs))

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Substrate	Visibility Class*	Detected?	Scavenged?
22	8:30am	n/a	Hoary Bat		Thawed	17	E 0438325	N 4763197	20	SE	dirt	1	☑-Y / ☐-N	☐-Y / ☑-N
				Thread			E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
19	8:50am	n/a	Hoary Bat		Thawed	17	E 0442951	N 4764968	0	N	cement	1	☑-Y / ☐-N	☐-Y / ☑-N
				Thread			E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
12	9:05am	17:00	Chipping Sparrow		Thawed	17	E 0447828	N 4763360	48	W	gravel	1	☐-Y / ☑-N	☐-Y / ☑-N
				Thread			E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N
							E	N					☐-Y / ☐-N	☐-Y / ☐-N

Print Name & Initial: Anna Corrigan AC (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: MELISSA STRAUS MAS (field notes QA/QC personnel)

Stantec

Scavenger Trial Carcass Set-up & Daily Check Form

Project No: 160961067 Project Name: Adelaide Wind Farm

YEAR: 2016 Personnel: Nash Colville

SEASON: May 4th 2016

Weather on placement date: 14°C (TEMP (°C)) 23km/h / SE (WIND speed/direction) Clear (CLOUD) 0 (PPT) 21mm (PPT (last 24 hrs))

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Date Placed dd/mm	Turbine No.	Carcass No.	Species	Condition fresh/frozen	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Visib. Class*	VISIT 1 [1,2]	VISIT 2 [1,2]	VISIT 3 [1,2]	VISIT 4 [1,2]
04/05	6	1	Robin	Frozen	17	E 045 1496	N 476 2594	25m	SE	2	Date: May 5th Weather: Partly Cloudy Scav'ged? ☐-Y / ■-N	Date: May 9th Weather: Overcast Scav'ged? ☐-Y / ■-N	Date: May 12th Weather: Partly cloudy Scav'ged? ☐-Y / ■-N	Date: May 16th Weather: Partly Cloudy Scav'ged? ☐-Y / ■-N
11	11	2	Kinglet	〃	17	E 044 9787	N 476 3804	41m	W	1	Date: 〃 Weather: 〃 Scav'ged? ☐-Y / ■-N	Date: 〃 Weather: 〃 Scav'ged? ☐-Y / ■-N	Date: 〃 Weather: 〃 Scav'ged? ☐-Y / ■-N	Date: 〃 Weather: 〃 Scav'ged? ■-Y / ☐-N
11	12	3	Bat	〃	17	E 044 7863	N 476 3378	21m	NW	1	Date: 〃 Weather: 〃 Scav'ged? ☐-Y / ■-N	Date: 〃 Weather: 〃 Scav'ged? ☐-Y / ■-N	Date: 〃 Weather: 〃 Scav'ged? ☐-Y / ■-N	Date: 〃 Weather: 〃 Scav'ged? ■-Y / ☐-N
11	14	4	Kinglet	〃	17	E 044 7155	N 476 4832	26m	SW	1	Date: 〃 Weather: 〃 Scav'ged? ☐-Y / ■-N	Date: 〃 Weather: 〃 Scav'ged? ■-Y / ☐-N	Date: 〃 Weather: 〃 Scav'ged? ■-Y / ☐-N	Date: 〃 Weather: 〃 Scav'ged? ■-Y / ☐-N
11	17	5	Kinglet	〃	17	E 044 4488	N 476 5072	19m	NW	2	Date: 〃 Weather: 〃 Scav'ged? ■-Y / ■-N	Date: 〃 Weather: 〃 Scav'ged? ☑-Y / ■-N	Date: 〃 Weather: 〃 Scav'ged? ☑-Y / ■-N	Date: 〃 Weather: 〃 Scav'ged? ☑-Y / ■-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N

* See visibility class key at top of page

[1] N-Not scavenged includes partial scavenging in which sufficient carcass remains for subsequent scavenging (e.g. only head removed, ½ or more of body remaining)

[2] Y-Scavenged indicates that the carcass is entirely missing or parts remaining (e.g. feathers, wings, entrails) would not likely be further scavenged

Print Name & Initial: Nash Colville (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Scavenger Trial Carcass Set-up & Daily Check Form

Project No: 160961067 Project Name: Adelaide Wind Farm

YEAR: 2016 Personnel: Nash Colville

SEASON: May 18th

Weather: on placement date	18°C TEMP (°C)	11km/h / W WIND speed/direction	Fair(15%) CLOUD	0 PPT	– PPT (last 24 hrs)

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Date Placed dd/mm	Turbine No.	Carcass No.	Species	Condition fresh/frozen	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Visib. Class*	VISIT 1 [1,2]	VISIT 2 [1,2]	VISIT 3 [1,2]	VISIT 4 [1,2]
18/05	14	6	Hoary Bat	frozen	17	E 0447150	N 4764897	46	SE	1	Date: May 19th Weather: Fair Scav'ged? ☐-Y / ■-N	Date: May 24th Weather: Clear Scav'ged? ☐-Y / ■-N	Date: May 26th Weather: Overcast Scav'ged? ☐-Y / ■-N	Date: May 30th Weather: Clear Scav'ged? ■-Y / ☐-N
〃	11	7	Kinglet	〃	17	E 0632382	N 4753368	47	SE	2	Date: 〃 Weather: 〃 Scav'ged? ☐-Y / ■-N	Date: 〃 Weather: 〃 Scav'ged? ☐-Y / ■-N	Date: 〃 Weather: 〃 Scav'ged? ☐-Y / ■-N	Date: 〃 Weather: 〃 Scav'ged? ☐-Y / ■-N
〃	27	8	Hoary Bat	〃	17	E 0435979	N 4765491	33	SW	1	Date: 〃 Weather: 〃 Scav'ged? ☐-Y / ■-N	Date: 〃 Weather: 〃 Scav'ged? ■-Y / ☐-N	Date: 〃 Weather: 〃 Scav'ged? ■-Y / ☐-N	Date: 〃 Weather: 〃 Scav'ged? ■-Y / ☑-N
〃	22	9	Kinglet	〃	17	E 0438260	N 4763202	37	W	1	Date: 〃 Weather: 〃 Scav'ged? ■-Y / ☐-N	Date: 〃 Weather: Scav'ged? ■-Y / ☑-N	Date: 〃 Weather: 〃 Scav'ged? ■-Y / ☑-N	Date: 〃 Weather: 〃 Scav'ged? ■-Y / ☑-N
〃	20	10	Robin	〃	17	E 0440212	N 4765222	41	W	2	Date: 〃 Weather: 〃 Scav'ged? ☐-Y / ■-N	Date: 〃 Weather: 〃 Scav'ged? ☐-Y / ■-N	Date: 〃 Weather: 〃 Scav'ged? ■-Y / ☐-N	Date: 〃 Weather: 〃 Scav'ged? ■-Y / ☑-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N

* See visibility class key at top of page

[1] N-Not scavenged includes partial scavenging in which sufficient carcass remains for subsequent scavenging (e.g. only head removed, ½ or more of body remaining)

[2] Y-Scavenged indicates that the carcass is entirely missing or parts remaining (e.g. feathers, wings, entrails) would not likely be further scavenged

Print Name & Initial: Nash Colville N.C. (field notes author)

Quality Control: This form is complete ☐ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Scavenger Trial Carcass Set-up & Daily Check Form

Project No: 160961067 | Project Name: Adelaide Wind Farm
YEAR: 2016 | Personnel: Nash Colville
SEASON: June 5th
Weather: 15°C | 19km/h / W | Occassional thunderstorms (80%) | 3-5mm | 1-4mm
on placement date: TEMP (°C) | WIND speed/direction | CLOUD | PPT | PPT (last 24 hrs)

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Date Placed dd/mm	Turbine No.	Carcass No.	Species	Condition fresh/frozen	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Visib. Class*	VISIT 1 [1,2]	VISIT 2 [1,2]	VISIT 3 [1,2]	VISIT 4 [1,2]
05/06	7	11	Kinglet	Frozen	17	E 044 9217	N 476 3617	26	W	2	Date: June 6th Weather: Fair Scav'ged? ☐-Y / ■-N	Date: June 9th Weather: Clear Scav'ged? ☐-Y / ■-N	Date: June 13th Weather: Overcast Scav'ged? ■-Y / ☐-N	Date: June 20th Weather: Fair Scav'ged? ■-Y / ☑-N
〃	6	12	Robin	〃	17	E 045 1987	N 476 2586	21	S	2	Date: 〃 Weather: Fair Scav'ged? ☐-Y / ■-N	Date: 〃 Weather: 〃 Scav'ged? ■-Y / ☐-N	Date: 〃 Weather: 〃 Scav'ged? ■-Y / ☐-N	Date: 〃 Weather: 〃 Scav'ged? ■-Y / ☐-N
〃	11	13	Bat	〃	17	E 044 9189	N 476 3636	40	E	1	Date: 〃 Weather: Overcast Scav'ged? ☐-Y / ■-N	Date: 〃 Weather: 〃 Scav'ged? ☐-Y / ■-N	Date: 〃 Weather: 〃 Scav'ged? ☐-Y / ■-N	Date: 〃 Weather: 〃 Scav'ged? ☐-Y / ■-N
〃	12	14	Kinglet	〃	17	E 044 7872	N 476 3358	<1	W	1	Date: 〃 Weather: Overcast Scav'ged? ☐-Y / ■-N	Date: 〃 Weather: 〃 Scav'ged? ☐-Y / ■-N	Date: 〃 Weather: 〃 Scav'ged? ☐-Y / ■-N	Date: 〃 Weather: 〃 Scav'ged? ■-Y / ☐-N
〃	14	15	Kinglet	〃	17	E 044 7184	N 476 4853	13	E	1	Date: 〃 Weather: Overcast Scav'ged? ☐-Y / ■-N	Date: 〃 Weather: 〃 Scav'ged? ☐-Y / ■-N	Date: 〃 Weather: 〃 Scav'ged? ☐-Y / ■-N	Date: 〃 Weather: 〃 Scav'ged? ■-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N

* See visibility class key at top of page
[1] N-Not scavenged includes partial scavenging in which sufficient carcass remains for subsequent scavenging (e.g. only head removed, ½ or more of body remaining)
[2] Y-Scavenged indicates that the carcass is entirely missing or parts remaining (e.g. feathers, wings, entrails) would not likely be further scavenged

Print Name & Initial: Nash Colville N.C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑
Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Scavenger Trial Carcass Set-up & Daily Check Form

Project No: 160961067
YEAR: 2016
SEASON: Spring
Weather: 22°C (on placement date) TEMP (°C)

Project Name: Adelaide Wind Farm
Personnel: Nash Colville

14 Km/h S — WIND speed/direction
Overcast — CLOUD
5mm — PPT
1-2mm — PPT (last 24 hrs)

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Date Placed dd/mm	Turbine No.	Carcass No.	Species	Condition fresh/frozen	UTM Zone	UTM Easting	UTM Northing	Position from turbine Dist. (m)	Position from turbine Direction	Visib. Class*
15/06	7	16	Bat	Thawed	17	E 044 4679	N 476 2182	41	NE	1
〃	17	17	Bat	〃	17	E 043 8336	N 476 3241	29	E	2
〃	19	18	Kinglet	〃	17	E 044 2490	N 476 4940	50	E	1
〃	20	19	Robin	〃	17	E 044 0258	N 476 5223	<1	W	1
〃	22	20	Bat	〃	17	E 044 4534	N 476 5063	45	NE	2
						E	N			
						E	N			
						E	N			
						E	N			
						E	N			

VISIT 1 [1,2]	VISIT 2 [1,2]	VISIT 3 [1,2]	VISIT 4 [1,2]
Date: June 16th	Date: June 20th	Date: June 23rd	Date: June 27th
Weather: Thunderstorms	Weather: Overcast	Weather: Clear	Weather: clear
Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N
Date: 〃	Date: 〃	Date: 〃	Date: 〃
Weather: 〃	Weather: 〃	Weather: 〃	Weather: 〃
Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N
Date: 〃	Date: 〃	Date: 〃	Date: 〃
Weather: 〃	Weather: 〃	Weather: 〃	Weather: 〃
Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N
Date: 〃	Date: 〃	Date: 〃	Date: 〃
Weather: 〃	Weather: 〃	Weather: 〃	Weather: 〃
Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ■-Y / ☐-N	Scav'ged? ■-Y / ☐-N
Date: 〃	Date: 〃	Date: 〃	Date: 〃
Weather: 〃	Weather: 〃	Weather: 〃	Weather: 〃
Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ■-Y / ☐-N	Scav'ged? ■-Y / ☐-N
Date:	Date:	Date:	Date:
Weather:	Weather:	Weather:	Weather:
Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N
Date:	Date:	Date:	Date:
Weather:	Weather:	Weather:	Weather:
Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N
Date:	Date:	Date:	Date:
Weather:	Weather:	Weather:	Weather:
Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N
Date:	Date:	Date:	Date:
Weather:	Weather:	Weather:	Weather:
Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N
Date:	Date:	Date:	Date:
Weather:	Weather:	Weather:	Weather:
Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N

* See visibility class key at top of page

[1] N-Not scavenged includes partial scavenging in which sufficient carcass remains for subsequent scavenging (e.g. only head removed, ½ or more of body remaining)

[2] Y-Scavenged indicates that the carcass is entirely missing or parts remaining (e.g. feathers, wings, entrails) would not likely be further scavenged

PAGE ___ OF ___

Print Name & Initial: Nash C. (field notes author)

Quality Control: Print Name & Initial: (field notes QA/QC personnel)

This form is complete ☐ & legible ☐

Stantec

Scavenger Trial Carcass Set-up & Daily Check Form

Project No: 160961067 | Project Name: Adelaide Wind Farm
YEAR: 2016 | Personnel:
SEASON: Summer

Weather: on placement date	TEMP (°C)	WIND speed/direction	CLOUD	PPT	PPT (last 24 hrs)
	28°C	12 km/h / SW	Partly Cloudy	/	/

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Date Placed dd/mm	Turbine No.	Carcass No.	Species	Condition fresh/frozen	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Visib. Class*
13/07	6	21	Bat	Thawed	17	E 045 1974	N 476 2591	16	S	2
〃	11	22	Raptor	〃	17	E 044 9192	N 476 3621	44	E	1
〃	12	23	Kinglet	〃	17	E 044 7884	N 476 3362	3	S	1
〃	22	24	Robin	〃	17	E 043 8311	N 476 3363	11	N	2
〃	27	25	Kinglet	〃	17	E 043 5955	N 476 5462	2	W	1
						E	N			
						E	N			
						E	N			
						E	N			
						E	N			

VISIT 1 [1,2]	VISIT 2 [1,2]	VISIT 3 [1,2]	VISIT 4 [1,2]
Date: July 14th	Date: July 18th	Date: July 21st	Date: July 26th
Weather: Partly Cloudy	Weather: Partly Cloudy	Weather: Fair	Weather: Partly Cloudy
Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N
Date: 〃	Date: 〃	Date: 〃	Date: 〃
Weather: 〃	Weather: 〃	Weather: 〃	Weather: 〃
Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ■-Y / ☐-N
Date: 〃	Date: 〃	Date: 〃	Date: 〃
Weather: 〃	Weather: 〃	Weather: 〃	Weather: 〃
Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ■-Y / ☐-N	Scav'ged? ■-Y / ☐-N
Date: 〃	Date: 〃	Date: 〃	Date: 〃
Weather: 〃	Weather: 〃	Weather: 〃	Weather: 〃
Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ■-Y / ☐-N
Date: 〃	Date: 〃	Date: 〃	Date: 〃
Weather: 〃	Weather: 〃	Weather: 〃	Weather: 〃
Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ■-Y / ☐-N
Date:	Date:	Date:	Date:
Weather:	Weather:	Weather:	Weather:
Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N
Date:	Date:	Date:	Date:
Weather:	Weather:	Weather:	Weather:
Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N
Date:	Date:	Date:	Date:
Weather:	Weather:	Weather:	Weather:
Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N
Date:	Date:	Date:	Date:
Weather:	Weather:	Weather:	Weather:
Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N
Date:	Date:	Date:	Date:
Weather:	Weather:	Weather:	Weather:
Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N

* See visibility class key at top of page

[1] N-Not scavenged includes partial scavenging in which sufficient carcass remains for subsequent scavenging (e.g. only head removed, ½ or more of body remaining)

[2] Y-Scavenged indicates that the carcass is entirely missing or parts remaining (e.g. feathers, wings, entrails) would not likely be further scavenged

PAGE ___ OF ___

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☐ & legible ☐

Print Name & Initial: (field notes QA/QC personnel)

Stantec

Scavenger Trial Carcass Set-up & Daily Check Form

Project No: 160961067 Project Name: Adelaide Wind Farm

YEAR: 2016 Personnel: Nash Colville

SEASON: July 27th

Weather on placement date: 26°C (TEMP (°C)) | 18 km/h / SW (WIND speed/direction) | 20% (CLOUD) | 0 (PPT) | 0 (PPT (last 24 hrs))

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Date Placed dd/mm	Turbine No.	Carcass No.	Species	Condition fresh/frozen	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Visib. Class*	VISIT 1 [1,2]	VISIT 2 [1,2]	VISIT 3 [1,2]	VISIT 4 [1,2]
27/07	7	26	Catbird	frozen	17	E 044 9666	N 476 2146	8	S	1	Date: July 29th Weather: fair Scav'ged? ☐-Y / ■-N	Date: Aug 2nd Weather: fair Scav'ged? ☐-Y / ■-N	Date: Aug 4 Weather: Few Clouds Scav'ged? ☐-Y / ■-N	Date: Aug 8th Weather: Partly Cloudy Scav'ged? ☐-Y / ■-N
11	14	27	Kinglet	11	11	E 044 7171	N 476 4807	44	S	1	Date: 11 Weather: 11 Scav'ged? ☐-Y / ■-N	Date: 11 Weather: 11 Scav'ged? ■-Y / ☐-N	Date: 11 Weather: 11 Scav'ged? ■-Y / ☐-N	Date: 11 Weather: 11 Scav'ged? ■-Y / ☐-N
11	19	28	Bat	11	11	E 044 2489	N 476 4983	39	NE	2	Date: 11 Weather: 11 Scav'ged? ☐-Y / ■-N	Date: 11 Weather: 11 Scav'ged? ■-Y / ☐-N	Date: 11 Weather: 11 Scav'ged? ■-Y / ☐-N	Date: 11 Weather: 11 Scav'ged? ■-Y / ☐-N
11	20	29	Kinglet	11	11	E 044 0261	N 476 5233	6	NE	2	Date: 11 Weather: 11 Scav'ged? ☐-Y / ■-N	Date: 11 Weather: 11 Scav'ged? ■-Y / ☐-N	Date: 11 Weather: 11 Scav'ged? ■-Y / ☐-N	Date: 11 Weather: 11 Scav'ged? ■-Y / ☐-N
11	22	30	Bat	11	N	E 043 8309	N 476 3216	3	N	2	Date: 11 Weather: 11 Scav'ged? ☐-Y / ■-N	Date: 11 Weather: 11 Scav'ged? ☐-Y / ■-N	Date: 11 Weather: 11 Scav'ged? ☐-Y / ■-N	Date: 11 Weather: 11 Scav'ged? ☐-Y / ■-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
*Not checked on the 28th due to change in survey dates.						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
Assumed not scavenged on the 28th since nothing scavenged on the 29th.						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N

* See visibility class key at top of page

[1] N-Not scavenged includes partial scavenging in which sufficient carcass remains for subsequent scavenging (e.g. only head removed, ½ or more of body remaining)

[2] Y-Scavenged indicates that the carcass is entirely missing or parts remaining (e.g. feathers, wings, entrails) would not likely be further scavenged

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Scavenger Trial Carcass Set-up & Daily Check Form

Project No: 160961067
YEAR: 2016
SEASON: Summer
Weather: 28°C / 22 km/h / SE / Overcast / 3-5 mm / 5 mm
on placement date — TEMP (°C) — WIND speed/direction — CLOUD — PPT — PPT (last 24 hrs)

Project Name: Adelaide Wind Farm
Personnel: Nash Colville

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Date Placed dd/mm	Turbine No.	Carcass No.	Species	Condition fresh/frozen	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Visib. Class*
15/08	7	31	Kinglet	Thawed	17	E 044 9660	N 476 2156	11	E	2
11	12	32	Kinglet	11	17	E 044 7872	N 476 3345	12	SW	1
11	14	33	Gray Catbird	11	17	E 044 7167	N 476 4858	6	N	1
11	20	34	Bat	11	17	E 044 0265	N 476 5215	14	SE	2
11	27	35	Bat	11	17	E 043 5460	N 476 5464	<1	SN	1
						E	N			
						E	N			
						E	N			
						E	N			
						E	N			

VISIT 1 [1,2]	VISIT 2 [1,2]	VISIT 3 [1,2]	VISIT 4 [1,2]
Date: Aug 16th	Date: Aug 18th	Date: Aug 22nd	Date: Aug 26th
Weather: Overcast	Weather: Fair	Weather: Fair	Weather: Overcast
Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ■-Y / ☐-N
Date:	Date:	Date:	Date:
Weather:	Weather:	Weather:	Weather:
Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N
Date:	Date:	Date:	Date:
Weather:	Weather:	Weather:	Weather:
Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N
Date:	Date:	Date:	Date:
Weather:	Weather:	Weather:	Weather:
Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N
Date:	Date:	Date:	Date:
Weather:	Weather:	Weather:	Weather:
Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N
Date:	Date:	Date:	Date:
Weather:	Weather:	Weather:	Weather:
Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N
Date:	Date:	Date:	Date:
Weather:	Weather:	Weather:	Weather:
Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N
Date:	Date:	Date:	Date:
Weather:	Weather:	Weather:	Weather:
Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N
Date:	Date:	Date:	Date:
Weather:	Weather:	Weather:	Weather:
Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N

* See visibility class key at top of page
N-Not scavenged includes partial scavenging in which sufficient carcass remains for subsequent scavenging (e.g. only head removed, ½ or more of body remaining)

PAGE ___ OF ___

Print Name & Initial: Nash C. (field notes author)

Quality Control: Print Name & Initial: (field notes QA/QC personnel)

This form is complete ☐ & legible ☐

Stantec

Scavenger Trial Carcass Set-up & Daily Check Form

Project No: 160961067
YEAR: 2016
SEASON: August 24th
Weather: 27 / 26th / 15
on placement date TEMP (°C) WIND speed/direction

Project Name: Adelaide Wind Farm
Personnel: Nash Colville
Fair (20%) CLOUD
PPT
PPT (last 24 hrs)

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Date Placed dd/mm	Turbine No.	Carcass No.	Species	Condition fresh/frozen	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Visib. Class*	VISIT 1 [1,2]	VISIT 2 [1,2]	VISIT 3 [1,2]	VISIT 4 [1,2]
24/8	6	36	Kinglet	frozen	17	E 045 1976	N 476 2616	5	N	2	Date: Aug 26th Weather: fair Scav'ged? ☐-Y / ■-N	Date: Aug 29th Weather: Fair Scav'ged? ☐-Y / ■-N	Date: Sept 1st Weather: Fair Scav'ged? ■-Y / ☐-N	Date: Sept 6th Weather: Scav'ged? ■-Y / ☐-N
"	11	37	Bat	"	"	E 044 9661	N 476 2153	8	N	1	Date: " Weather: " Scav'ged? ☐-Y / ■-N	Date: " Weather: " Scav'ged? ☐-Y / ■-N	Date: " Weather: Scav'ged? ■-Y / ☐-N	Date: " Weather: " Scav'ged? ■-Y / ☐-N
"	19	38	Cattard	"	"	E 044 2986	N 476 4962	38	E	1	Date: " Weather: " Scav'ged? ☐-Y / ■-N	Date: " Weather: " Scav'ged? ☐-Y / ■-N	Date: " Weather: " Scav'ged? ☐-Y / ■-N	Date: " Weather: " Scav'ged? ☐-Y / ■-N
"	22	39	Kinglet	"	"	E 043 8301	N 476 3209	7	W	1	Date: " Weather: " Scav'ged? ☐-Y / ■-N	Date: " Weather: " Scav'ged? ☐-Y / ■-N	Date: " Weather: " Scav'ged? ■-Y / ☐-N	Date: " Weather: " Scav'ged? ■-Y / ☐-N
"	27	40	Kinglet	"	"	E 043 5463	N 476 5450	15	S	2	Date: " Weather: " Scav'ged? ☐-Y / ■-N	Date: " Weather: " Scav'ged? ☐-Y / ■-N	Date: " Weather: " Scav'ged? ■-Y / ☐-N	Date: " Weather: " Scav'ged? ■-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N

* Carcasses should have been set up on the 25th, but since no carcasses scavenged on the 26th, used the data.

* See visibility class key at top of page
N-Not scavenged includes partial scavenging in which sufficient carcass remains for subsequent scavenging (e.g. only head removed, ½ or more of body remaining)
Y-Scavenged indicates that the carcass is entirely missing or parts remaining (e.g. feathers, wings, entrails) would not likely be further scavenged

PAGE ___ OF ___

Print Name & Initial: Nash C.
(field notes author)

Quality Control: This form is complete ☐ & legible ☐
Print Name & Initial:
(field notes QA/QC personnel)

Stantec

Scavenger Trial Carcass Set-up & Daily Check Form

Project No: 160961067 Project Name: Adelaide Wind Farm

YEAR: 2016 Personnel: Dan D'Eleuterio

SEASON: Fall

Weather on placement date: TEMP (°C) 27 | WIND speed/direction 8Km / S | CLOUD 0 | PPT 0 | PPT (last 24 hrs) 0

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Date Placed dd/mm	Turbine No.	Carcass No.	Species	Condition fresh/frozen	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Visib. Class*	VISIT 1 [1,2]	VISIT 2 [1,2]	VISIT 3 [1,2]	VISIT 4 [1,2]
07/09	7	41	Raptor	Freeze	17T	E 0449668	N 4762136	8m	SE	2	Date: 08/09 Weather: 26°Cloud Scav'ged? ☐-Y / ☒-N	Date: 12/04 Weather: 22° Sunny Scav'ged? ☐-Y / ☒-N	Date: 15/04 Weather: 23°Cloud Scav'ged? ☐-Y / ☒-N	Date: 20/09 Weather: 26° Sunny Scav'ged? ☐-Y / ☒-N
11	12	42	Bird	11	17T	E 0447862	N 4765347	18m	SE	1	Date: 11 Weather: 11 Scav'ged? ☐-Y / ☒-N	Date: 11 Weather: Scav'ged? ☐-Y / ☒-N	Date: 11 Weather: Scav'ged? ☒-Y / ☐-N	Date: Weather: 11 Scav'ged? ☒-Y / ☐-N
11	14	43	Bird	11	17T	E 0447155	N 4764845	17m	SW	2	Date: 11 Weather: 11 Scav'ged? ☒-Y / ☐-N	Date: 11 Weather: Scav'ged? ☒-Y / ☐-N	Date: 11 Weather: Scav'ged? ☒-Y / ☐-N	Date: Weather: 11 Scav'ged? ☒-Y / ☐-N
11	17	44	Bat	11	17T	E 0444522	N 4765079	20m	SE	1	Date: 11 Weather: 11 Scav'ged? ☐-Y / ☒-N	Date: 11 Weather: Scav'ged? ☐-Y / ☒-N	Date: 11 Weather: Scav'ged? ☒-Y / ☐-N	Date: Weather: 11 Scav'ged? ☒-Y / ☐-N
11	20	45	Bat	11	17T	E 0440255	N 4765241	11m	N	2	Date: 11 Weather: 11 Scav'ged? ☐-Y / ☒-N	Date: 11 Weather: Scav'ged? ☐-Y / ☒-N	Date: 11 Weather: Scav'ged? ☐-Y / ☒-N	Date: Weather: 11 Scav'ged? ☐-Y / ☒-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: 11 Weather: Scav'ged? ☐-Y / ☐-N	Date: 11 Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N

* See visibility class key at top of page

[1] N-Not scavenged includes partial scavenging in which sufficient carcass remains for subsequent scavenging (e.g. only head removed, ½ or more of body remaining)

[2] Y-Scavenged indicates that the carcass is entirely missing or parts remaining (e.g. feathers, wings, entrails) would not likely be further scavenged

Print Name & Initial: Dan D'Eleuterio DD (field notes author)

Quality Control: This form is complete ☐ & legible ☐

Print Name & Initial: (field notes QA/QC personnel)

Stantec

Scavenger Trial Carcass Set-up & Daily Check Form

Project No: 160961067 Project Name: Adelaide Wind Farm

YEAR: 2016 Personnel: Dan DiIlario

SEASON: Fall

Weather on placement date: TEMP (°C) 21 | WIND speed/direction 14 W | CLOUD 12 | PPT 0 | PPT (last 24 hrs) 0

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Date Placed dd/mm	Turbine No.	Carcass No.	Species	Condition fresh/frozen	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Visib. Class*	VISIT 1 [1,2]	VISIT 2 [1,2]	VISIT 3 [1,2]	VISIT 4 [1,2]
21/09	14	46	Raptor	Frozen	17	E0447184	N 4764836	21	SE	1	Date: 22/09 Weather: 26 Cloud Scav'ged? X-Y / ☐-N	Date: 26/09 Weather: 17 Rain Scav'ged? X-Y / ☐-N	Date: 29/09 Weather: 16 Rain Scav'ged? ☐-Y / X-N	Date: 03/10 Weather: 20 Cloud Scav'ged? ☐-Y / X-N
11	17	47	Bat	11	17	E 0444505	N 4765061	3	W	1	Date: 11 Weather: Scav'ged? X-Y / ☐-N	Date: 11 Weather: Scav'ged? X-Y / ☐-N	Date: 11 Weather: Scav'ged? X-Y / ☐-N	Date: 11 Weather: Scav'ged? X-Y / ☐-N
11	19	48	Bat	11	17	E 0442985	N 4764972	36	E	2	Date: 11 Weather: Scav'ged? ☐-Y / X-N	Date: 11 Weather: Scav'ged? ☐-Y / X-N	Date: 11 Weather: Scav'ged? ☐-Y / X-N	Date: 11 Weather: Scav'ged? X-Y / ☐-N
11	22	49	Bat	11	17	E 0438316	N 4763216	1	W	1	Date: 11 Weather: Scav'ged? X-Y / ☐-N	Date: 11 Weather: Scav'ged? X-Y / ☐-N	Date: 11 Weather: Scav'ged? X-Y / ☐-N	Date: 11 Weather: Scav'ged? X-Y / ☐-N
11	27	50	Bird	11	17	E 0435981	N 4765469	20	NE	1	Date: 11 Weather: Scav'ged? ☐-Y / X-N	Date: 11 Weather: Scav'ged? X-Y / ☐-N	Date: 11 Weather: Scav'ged? X-Y / ☐-N	Date: 11 Weather: Scav'ged? X-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N

* See visibility class key at top of page

[1] N-Not scavenged includes partial scavenging in which sufficient carcass remains for subsequent scavenging (e.g. only head removed, ½ or more of body remaining)

[2] Y-Scavenged indicates that the carcass is entirely missing or parts remaining (e.g. feathers, wings, entrails) would not likely be further scavenged

Print Name & Initial: Dan D'Ilario DD (field notes author)

Quality Control: This form is complete ☐ & legible ☐

Print Name & Initial: (field notes QA/QC personnel)

Stantec

Scavenger Trial Carcass Set-up & Daily Check Form

Project No: 160961067 Project Name: Adelaide Wind Farm

YEAR: 2016 Personnel: Dan Allen

SEASON: Fall

Weather: on placement date

17	13 | NE	11	0	0
TEMP (°C)	WIND speed/direction	CLOUD	PPT	PPT (last 24 hrs)

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Date Placed dd/mm	Turbine No.	Carcass No.	Species	Condition fresh/frozen	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Visib. Class*	VISIT 1 [1,2] 06/10	VISIT 2 [1,2]	VISIT 3 [1,2]	VISIT 4 [1,2]
05/10	7	✓	Bat	Frozen	17T	E 0449685	N 4762146	25	W	2	Date: 05/10	Date: 11/10	Date: 13/10	Date: 17/10
											Weather: 22 Sunny	Weather: 17 Cloud	Weather: 11 Cloud	Weather: 22 Sunny
											Scav'ged? ■-Y / ☐-N	Scav'ged? ■-Y / ☐-N	Scav'ged? ■-Y / ☐-N	Scav'ged? ■-Y / ☐-N
11	11		Bird	11	17T	E 0449150	N 4763613	14	N	2	Date:	Date:	Date:	Date: 11
											Weather: 11	Weather: 11	Weather: 11	Weather:
											Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ■-Y / ☐-N	Scav'ged? ■-Y / ☐-N
11	12		Bat	11	17T	E 0447854	N 4763361	6	W	1	Date:	Date:	Date:	Date: 11
											Weather: 11	Weather: 11	Weather: 11	Weather:
											Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N
11	14		Bird	11	17T	E 0447154	N 4764845	15	W	1	Date:	Date:	Date:	Date: 11
											Weather: 11	Weather: 11	Weather: 11	Weather:
											Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N	Scav'ged? ☐-Y / ■-N
11	17		Raptor	11	17T	E 0444493	N 4765052	15	E	2	Date:	Date:	Date:	Date: 11
											Weather: 11	Weather: 11	Weather: 11	Weather:
											Scav'ged? ■-Y / ☐-N	Scav'ged? ■-Y / ☐-N	Scav'ged? ■-Y / ☐-N	Scav'ged? ■-Y / ☐-N
						E	N				Date:	Date:	Date:	Date:
											Weather:	Weather:	Weather:	Weather:
											Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N
						E	N				Date:	Date:	Date:	Date:
											Weather:	Weather:	Weather:	Weather:
											Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N
						E	N				Date:	Date:	Date:	Date:
											Weather:	Weather:	Weather:	Weather:
											Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N
						E	N				Date:	Date:	Date:	Date:
											Weather:	Weather:	Weather:	Weather:
											Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N
						E	N				Date:	Date:	Date:	Date:
											Weather:	Weather:	Weather:	Weather:
											Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N	Scav'ged? ☐-Y / ☐-N

* See visibility class key at top of page

[1] N-Not scavenged includes partial scavenging in which sufficient carcass remains for subsequent scavenging (e.g. only head removed, ½ or more of body remaining)

[2] Y-Scavenged indicates that the carcass is entirely missing or parts remaining (e.g. feathers, wings, entrails) would not likely be further scavenged

PAGE 4 OF 4

Print Name & Initial: Dan D Haric DD (field notes author)

Quality Control: This form is complete ☐ & legible ☐

Print Name & Initial: (field notes QA/QC personnel)

FORM / REV: 2016-10-31

Stantec

Scavenger Trial Carcass Set-up & Daily Check Form

Project No: 160961067 Project Name: Adelaide Wind Farm

YEAR: 2016 Personnel: Dan Dh

SEASON: Fall

Weather: 17 | 19 | S | 41 | 0 | 0

on placement date — TEMP (°C) | WIND speed/direction | CLOUD | PPT | PPT (last 24 hrs)

Construction at T27

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Date Placed dd/mm	Turbine No.	Carcass No.	Species	Condition fresh/frozen	UTM Coordinates Zone	Easting	Northing	Position from turbine Dist. (m)	Direction	Visib. Class*	VISIT 1 [1,2]	VISIT 2 [1,2]	VISIT 3 [1,2]	VISIT 4 [1,2]
19/10	17	S6	Bat	Frozen	17T	E 0444558	N 4765087	18	SE	2	Date: 20/10 Weather: 13 Rain Scav'ged? ☐-Y / ☒-N	Date: 24/10 Weather: 9 Rain Scav'ged? ☒-Y / ☐-N	Date: 27/10 Weather: 16 Rain Scav'ged? ☒-Y / ☐-N	Date: 01/11 Weather: Scav'ged? ☒-Y / ☐-N
11	19	S7	Bird	11	11	E 0442956	N 4764958	9	S	1	Date: 11 Weather: Scav'ged? ☐-Y / ☒-N	Date: 11 Weather: Scav'ged? ☐-Y / ☒-N	Date: 11 Weather: Scav'ged? ☒-Y / ☐-N	Date: 11 Weather: Scav'ged? ☒-Y / ☐-N
11	20	S8	Raptor	11	11	E 0446240	N 4765234	12	NW	2	Date: 11 Weather: Scav'ged? ☐-Y / ☒-N	Date: 11 Weather: Scav'ged? ☐-Y / ☒-N	Date: 11 Weather: Scav'ged? ☐-Y / ☒-N	Date: 11 Weather: Scav'ged? ☐-Y / ☒-N
11	22	S9	Bat	11	11	E 0438316	N 4763207	1	N	1	Date: 11 Weather: Scav'ged? ☐-Y / ☒-N	Date: 11 Weather: Scav'ged? ☐-Y / ☒-N	Date: 11 Weather: Scav'ged? ☐-Y / ☒-N	Date: 11 Weather: Scav'ged? ☐-Y / ☒-N
11	27	C0	Bat	11	11	E 0435962	N 4765462	15	S	2	Date: 11 Weather: Scav'ged? ☐-Y / ☒-N	Date: 11 Weather: Scav'ged? ☒-Y / ☐-N	Date: 11 Weather: Scav'ged? ☒-Y / ☐-N	Date: 11 Weather: Scav'ged? ☒-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N
						E	N				Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N	Date: Weather: Scav'ged? ☐-Y / ☐-N

* See visibility class key at top of page

[1] N-Not scavenged includes partial scavenging in which sufficient carcass remains for subsequent scavenging (e.g. only head removed, ½ or more of body remaining)

[2] Y-Scavenged indicates that the carcass is entirely missing or parts remaining (e.g. feathers, wings, entrails) would not likely be further scavenged

PAGE 4 OF 4

Print Name & Initial: Dan D'Hart DH (field notes author)

Quality Control: This form is complete ☐ & legible ☐

Print Name & Initial: (field notes QA/QC personnel)

FORM / REV: 2016-10-31

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: May 12th, 2016

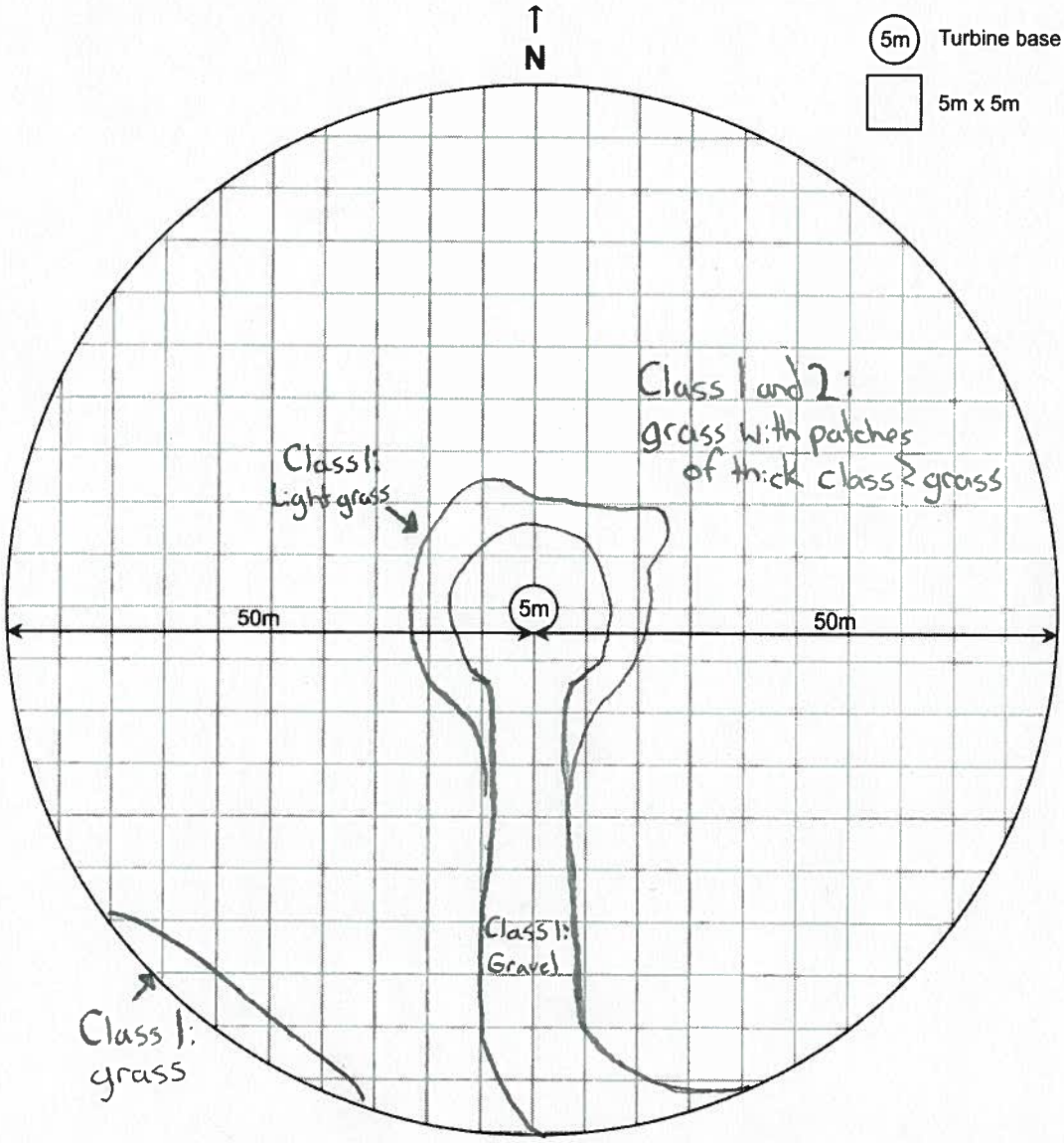
Field Personnel: Nash Colville

Turbine No.: 6

Total Area: 7,854 m²

Total Surveyable Area: 7854 m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Nash Colville N.C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: June 23rd, 2016

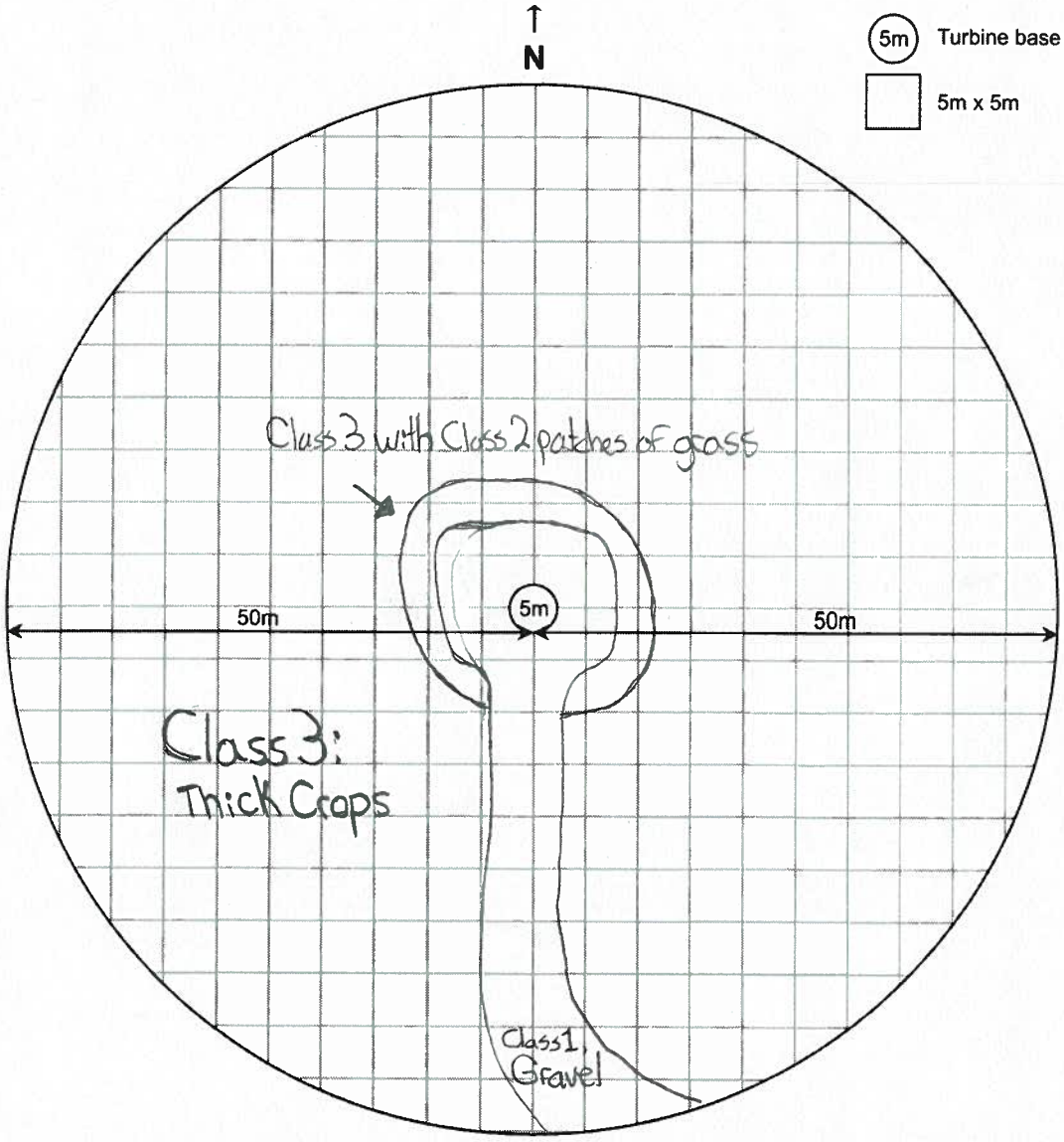
Field Personnel: Nash Colville

Turbine No.: 6

Total Area: 7,854 m²

Total Surveyable Area: ~4000 m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Nash Colville N.C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: July 18, 2016

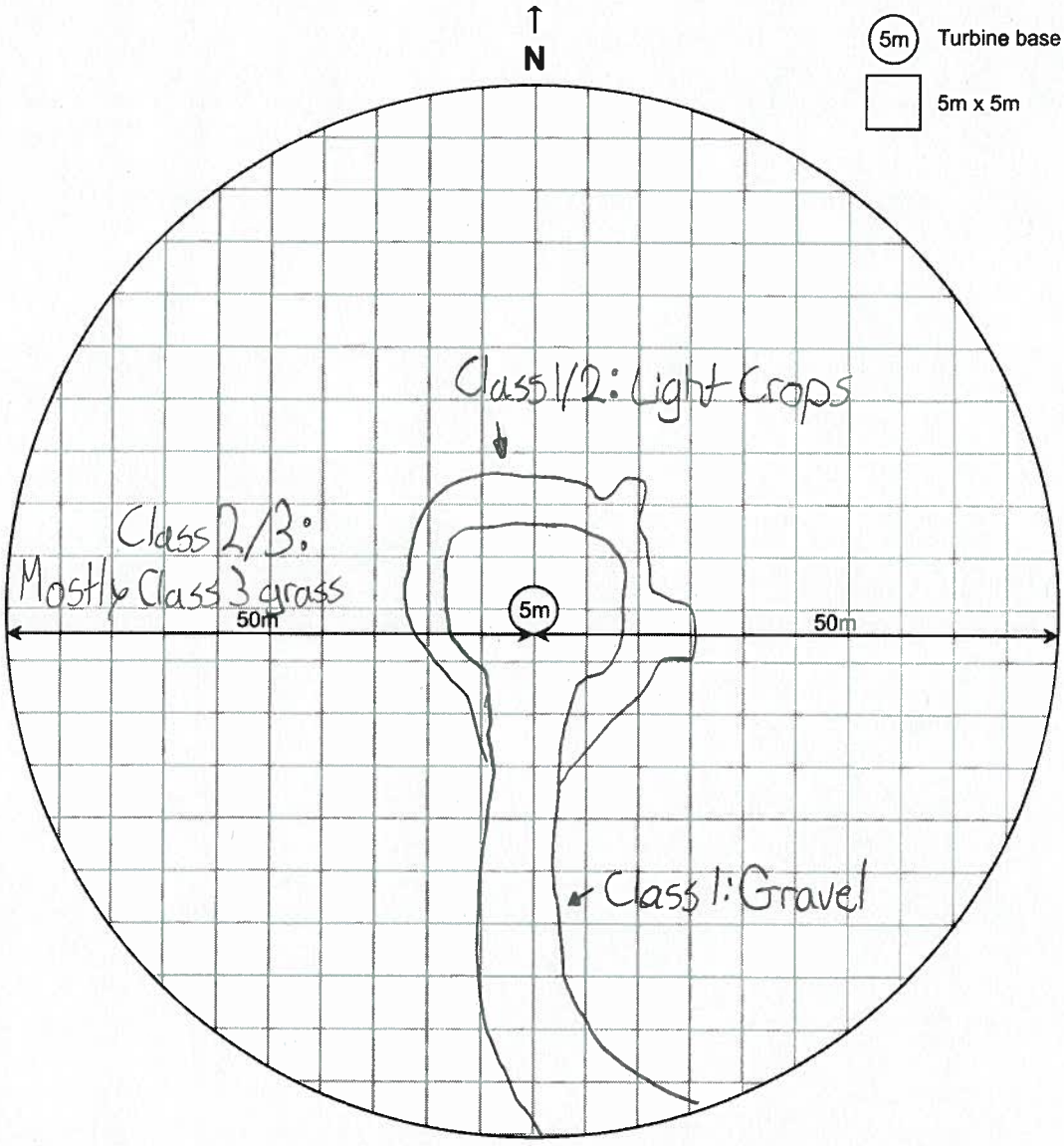
Field Personnel: Nash Colville

Turbine No.: 6

Total Area: 7,854 m²

Total Surveyable Area: ~6500m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: Sept 8, 2016

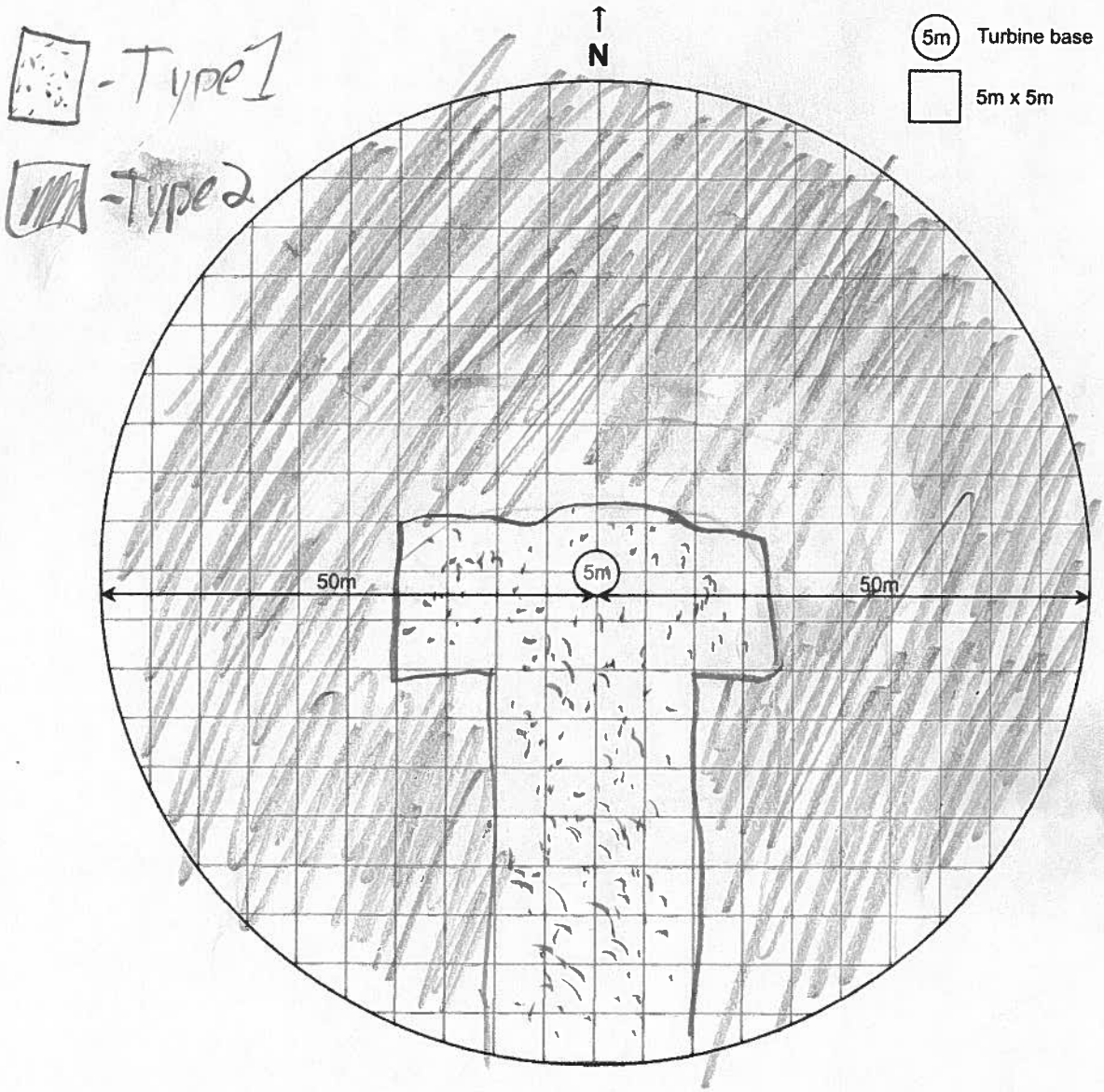
Field Personnel: Dan Dilario

Turbine No.: 6

Total Area: 7,854 m²

Total Surveyable Area: 7854m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Dan Dilario (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: May 12th, 2016

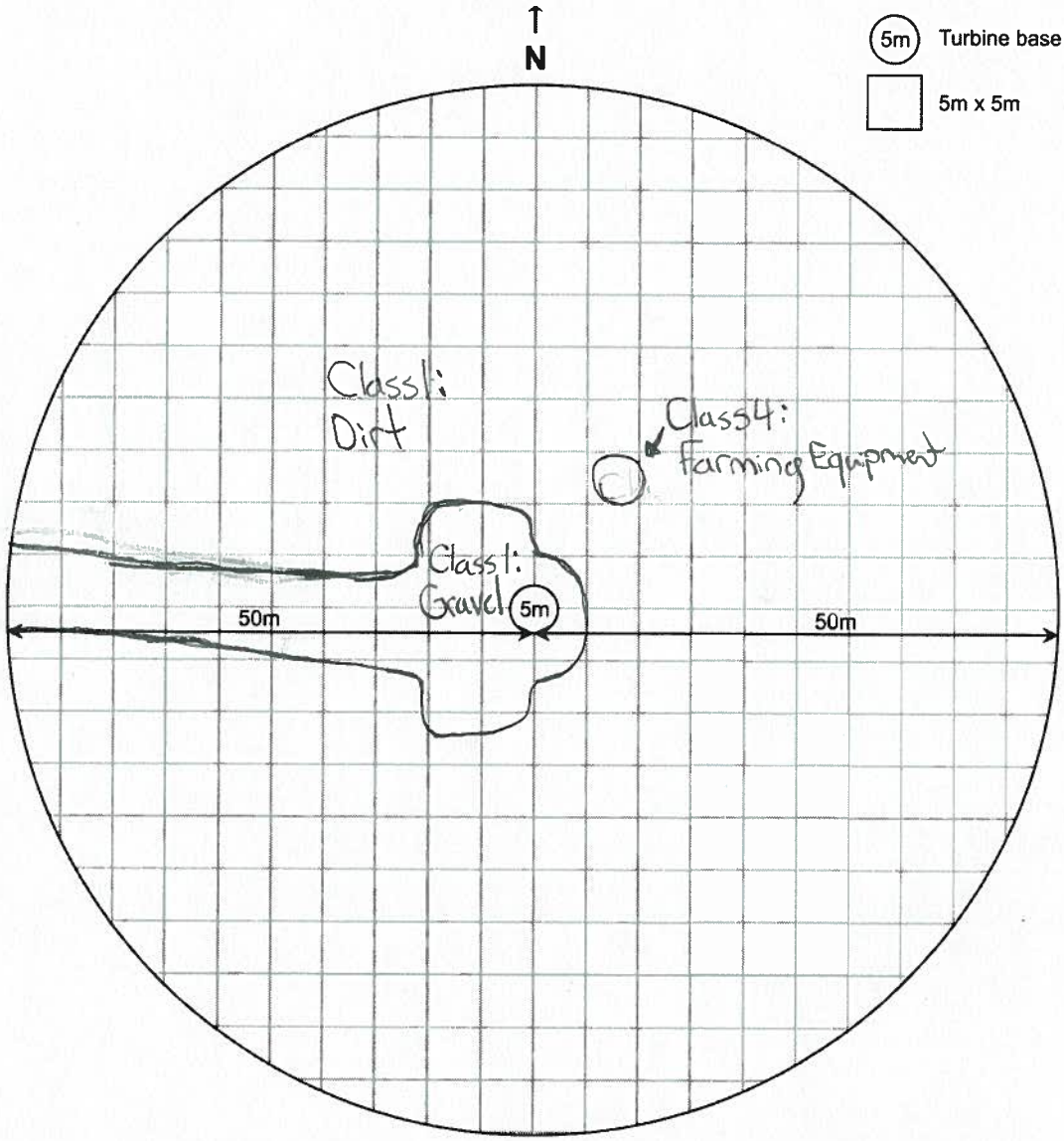
Field Personnel: Nash Colville

Turbine No.: 7

Total Area: 7,854 m²

Total Surveyable Area: 7,854 m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Nash Colville (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: June 23rd, 2016

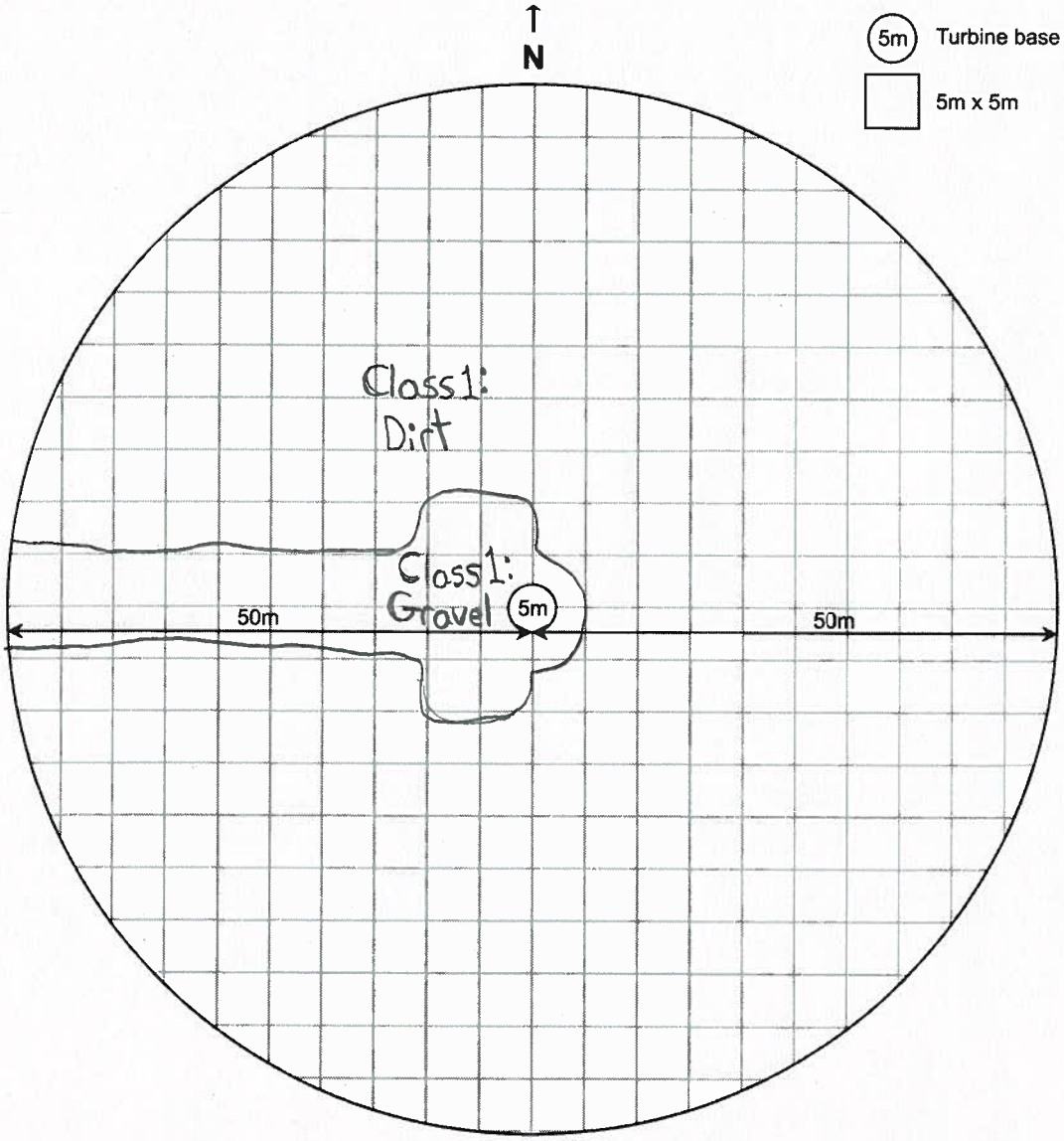
Field Personnel: Nash Colville

Turbine No.: 7

Total Area: 7,854 m²

Total Surveyable Area: 7,854 m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Nash Colville N.C (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: July 18, 2016

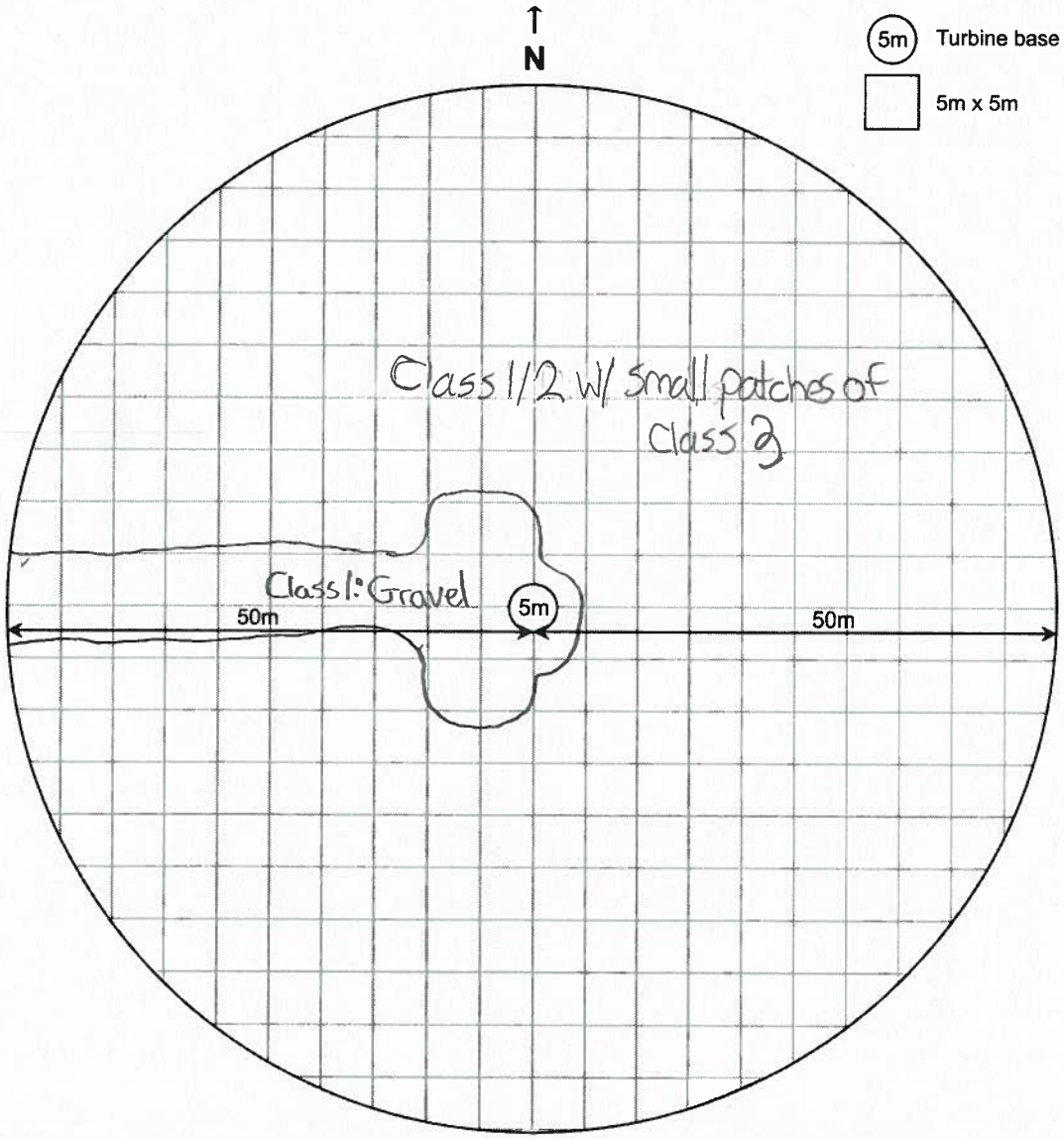
Field Personnel: Nash Colville

Turbine No.: 7

Total Area: 7,854 m²

Total Surveyable Area: ~7000-6000 m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: Sept 8th, 2016

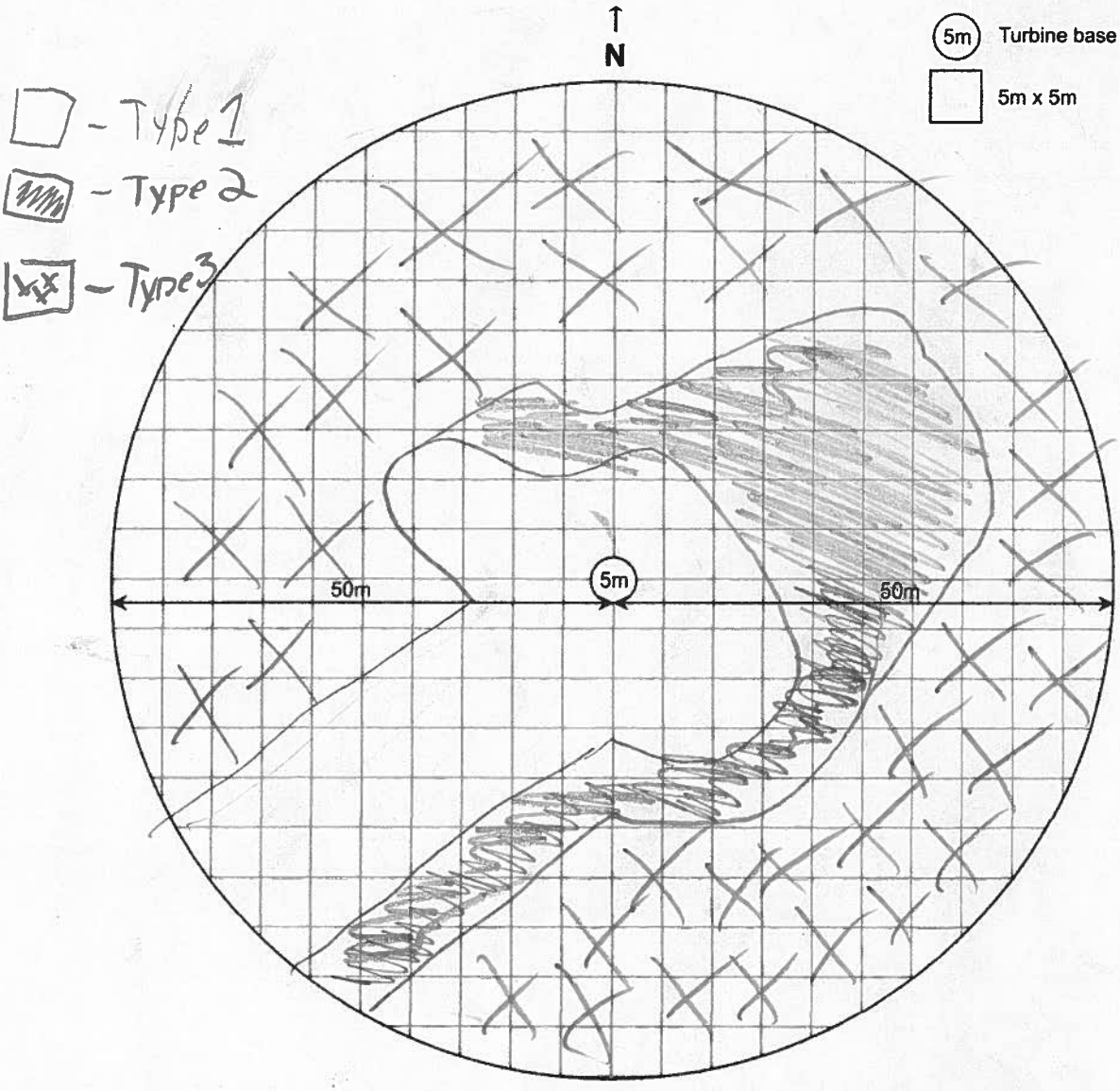
Field Personnel: Dan D'Orio

Turbine No.: 7

Total Area: 7,854 m²

Total Surveyable Area: 1125m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 10

Print Name & Initial: D.D Dan D'Orio (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: May 12th, 2016

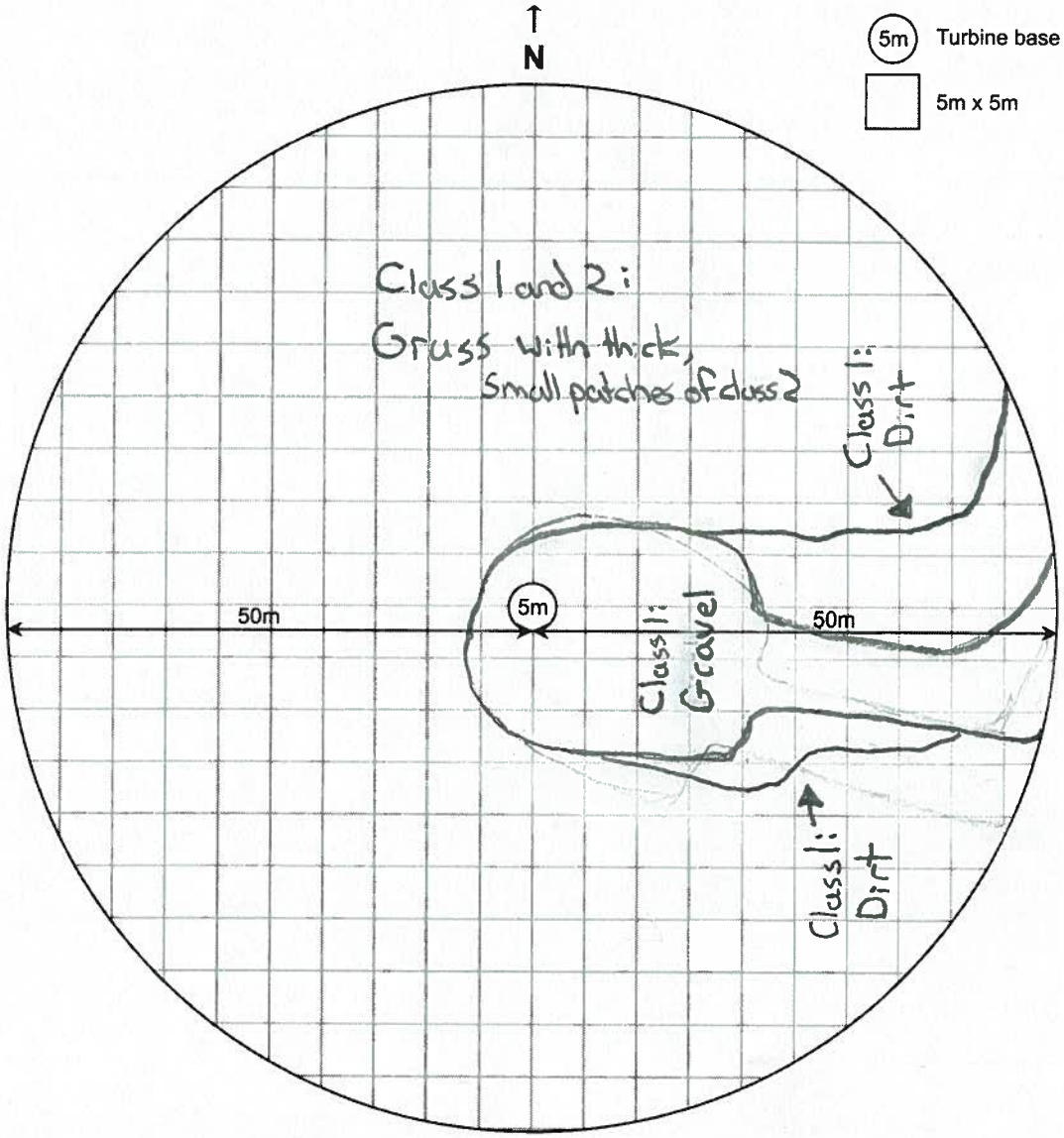
Field Personnel: Nash Colville

Turbine No.: 11

Total Area: 7,854 m²

Total Surveyable Area: 7,854 m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Nash Colville (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: June 23rd, 2016

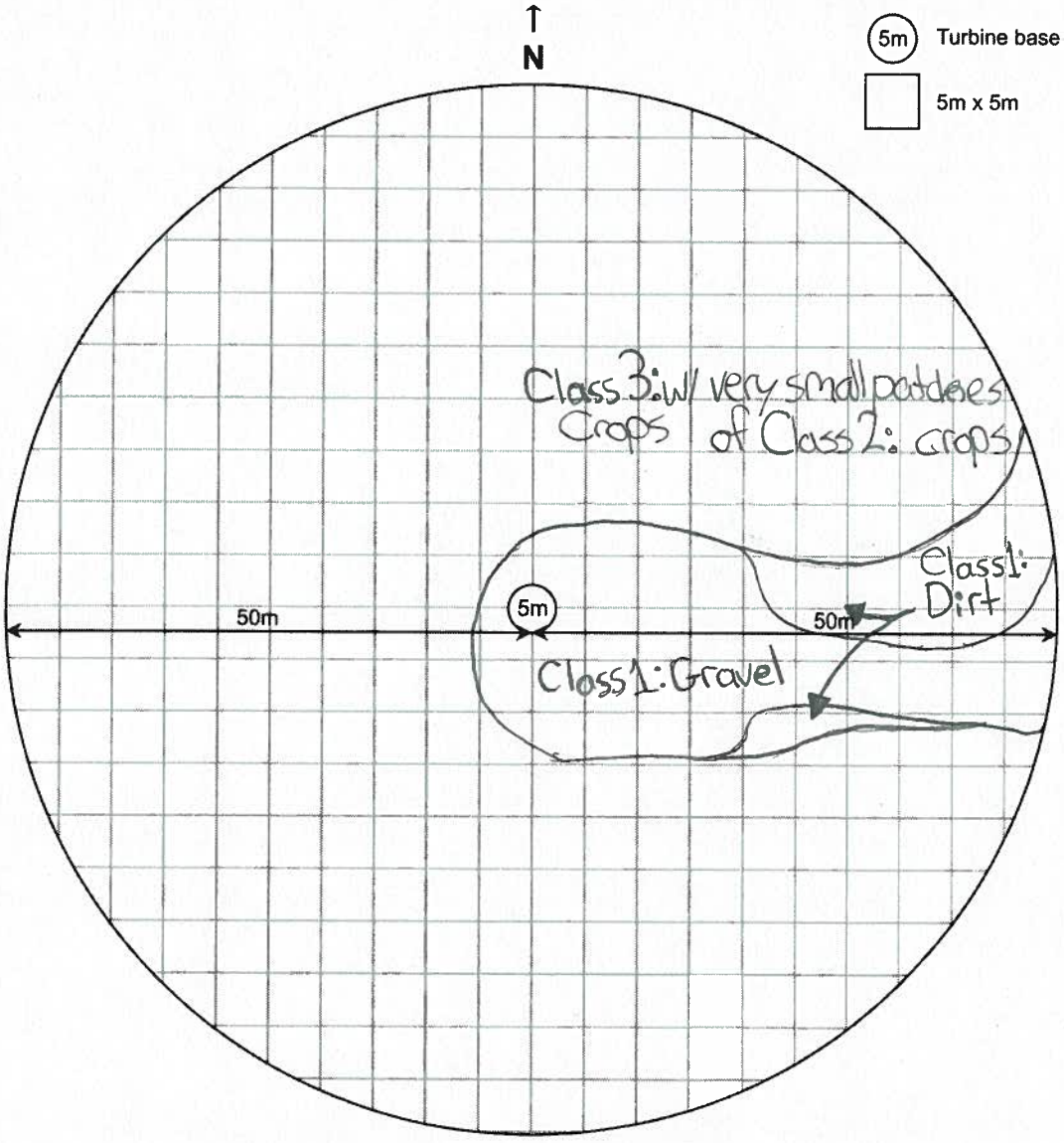
Field Personnel: Nash Colville

Turbine No.: 11

Total Area: 7,854 m²

Total Surveyable Area: ~4500 m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Nash Colville, N.C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: July 18th, 2016

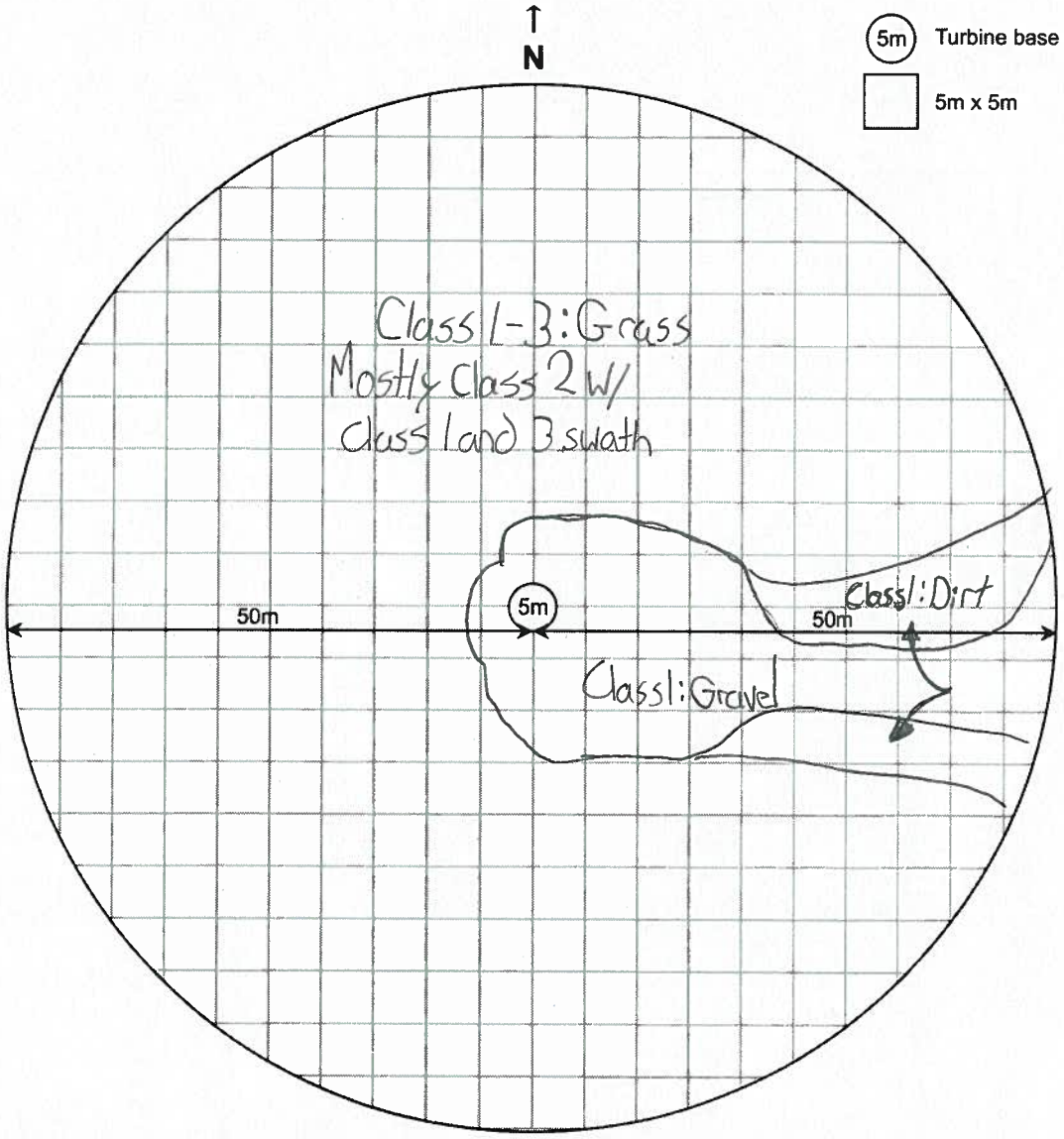
Field Personnel: Nash Colville

Turbine No.: 11

Total Area: 7,854 m²

Total Surveyable Area: ~7000-7854 m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: Sept 8/2016

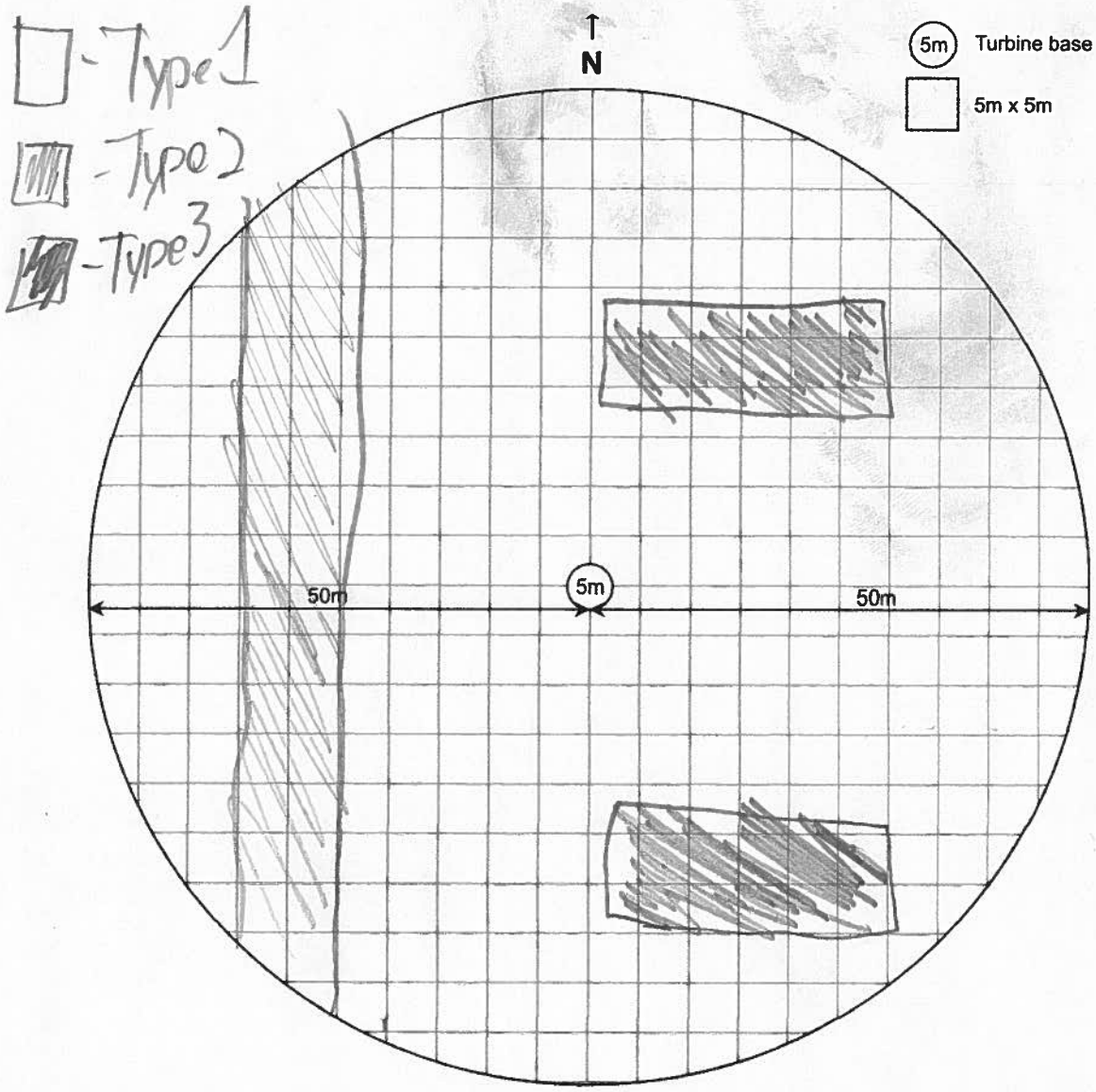
Field Personnel: Dan D'A

Turbine No.: 11

Total Area: 7,854 m²

Total Surveyable Area: 7150m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



Print Name & Initial: Dan D'Amico DD (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Carrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: May 12th, 2016

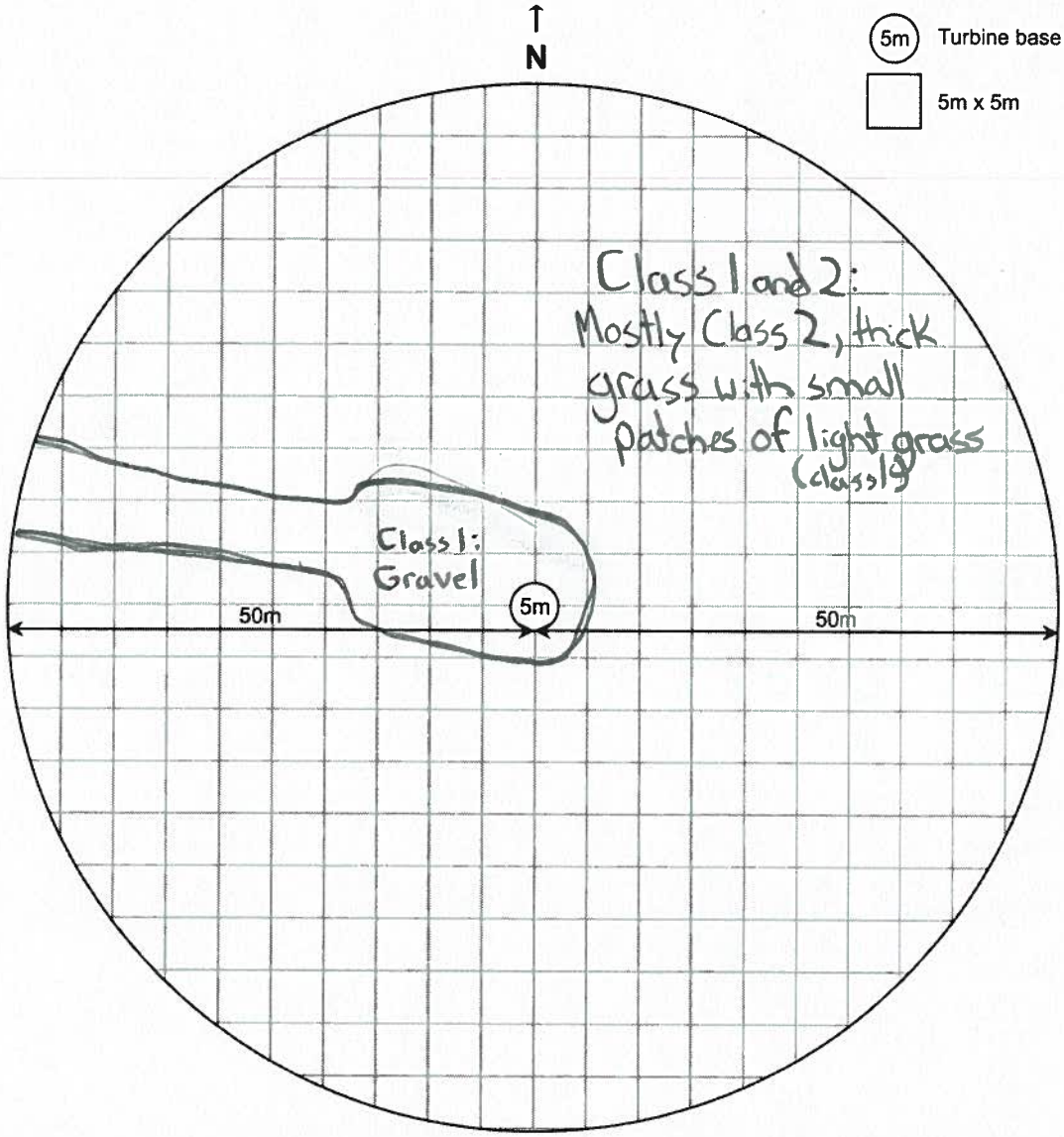
Field Personnel: Dan D'Iario

Turbine No.: 12

Total Area: 7,854 m²

Total Surveyable Area: 7,854 m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: June 23rd, 2016

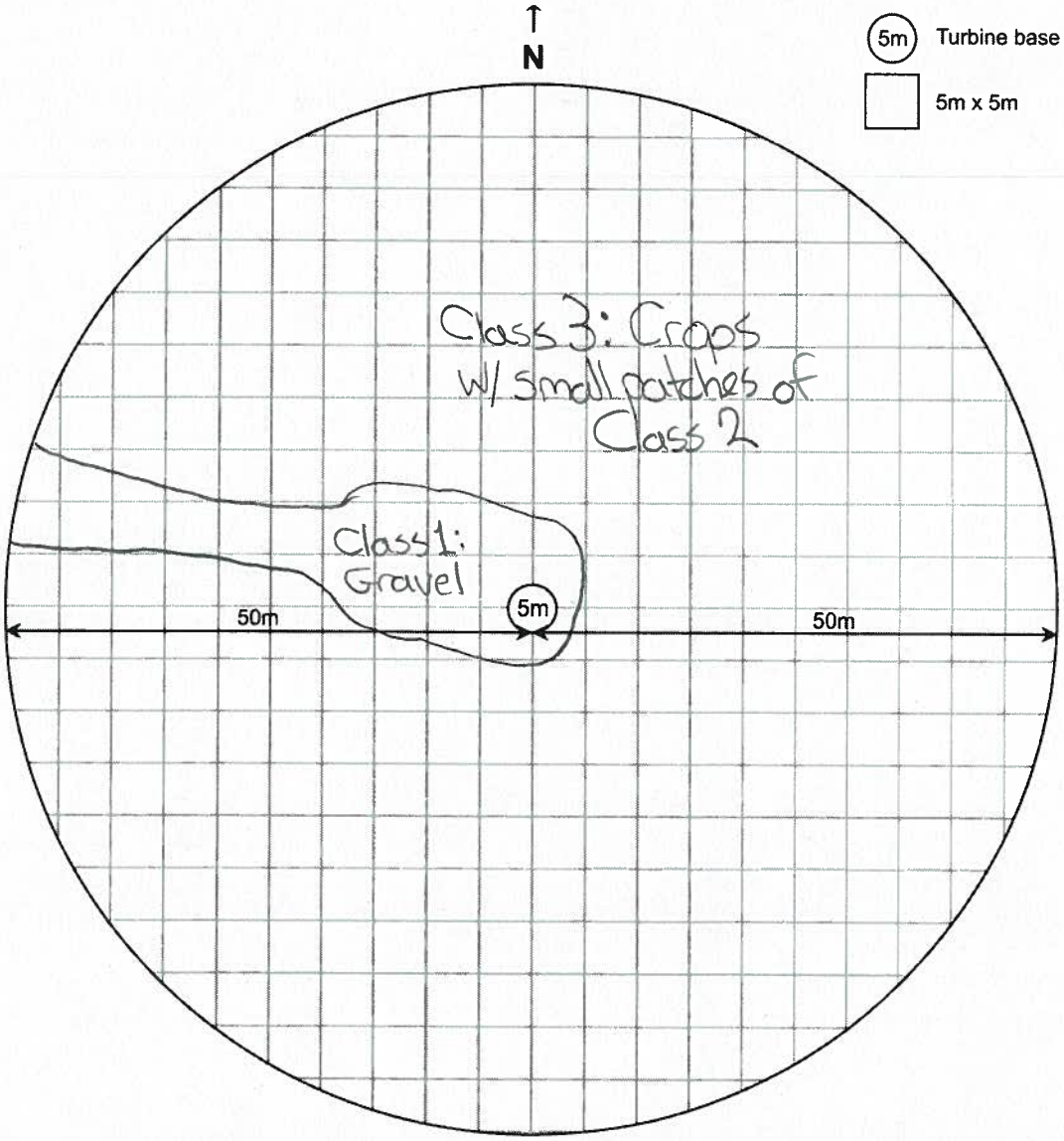
Field Personnel: Nash Colville

Turbine No.: 12

Total Area: 7,854 m²

Total Surveyable Area: ~3000 m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Nash Colville N.C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: July 18, 2016

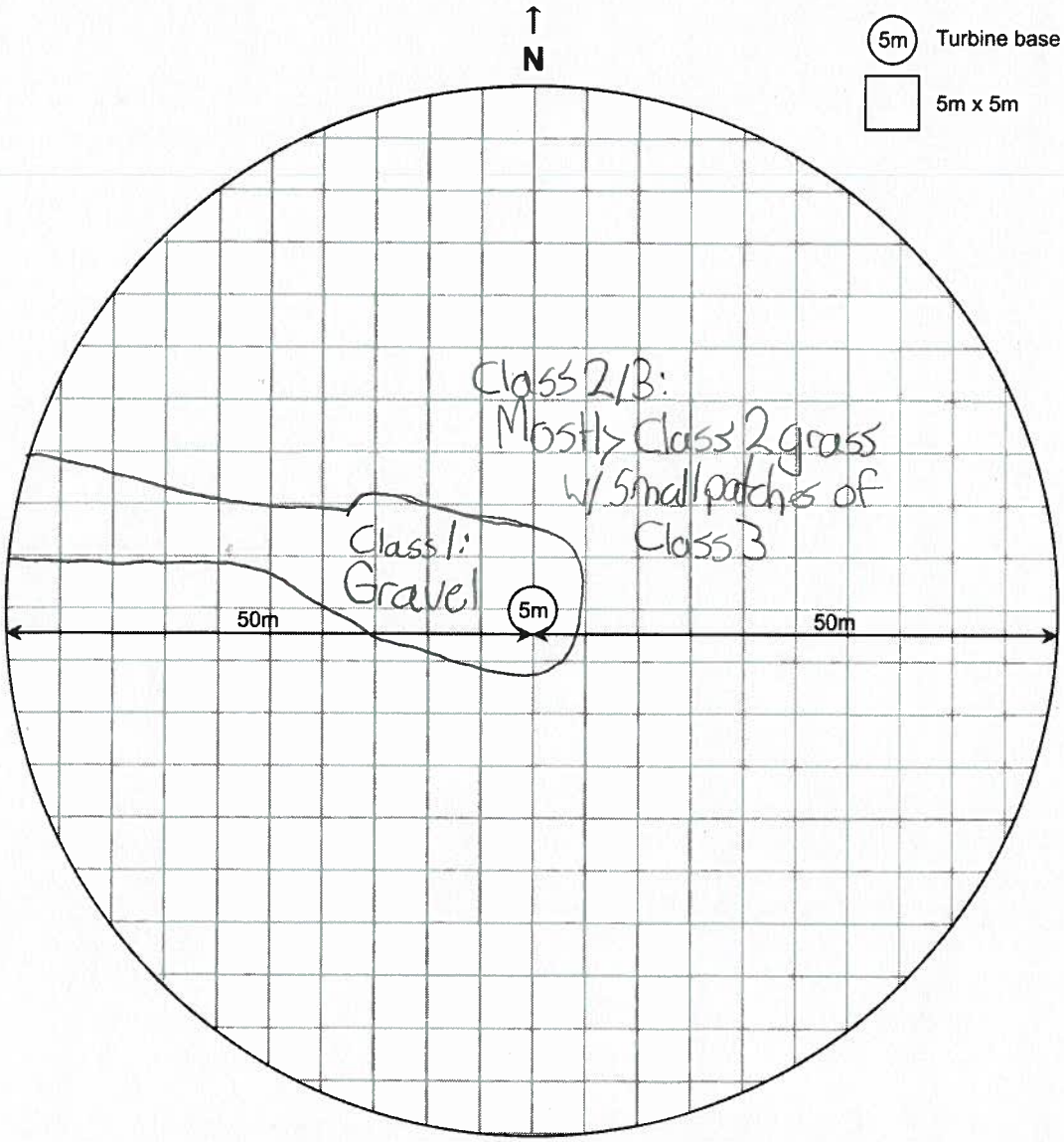
Field Personnel: Nash Colville

Turbine No.: 12

Total Area: 7,854 m²

Total Surveyable Area: ~7000 m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: Sept 8th / 2016

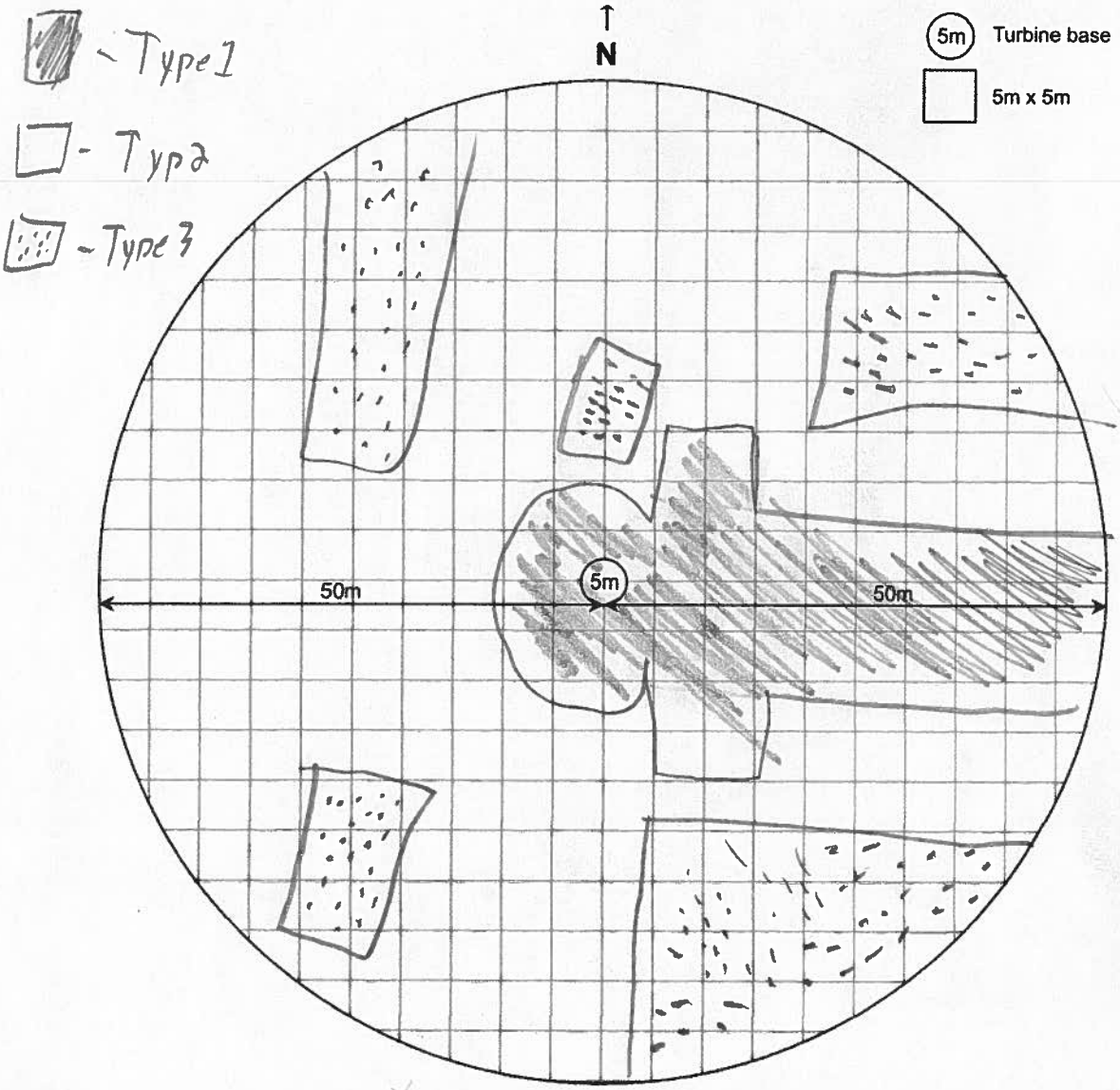
Field Personnel: Dan Dilario

Turbine No.: 17

Total Area: 7,854 m²

Total Surveyable Area: 6250 m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 2 OF 10

Print Name & Initial: Dan Dilario (field notes author)

Quality Control: This form is complete ☐ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: May 12th, 2016

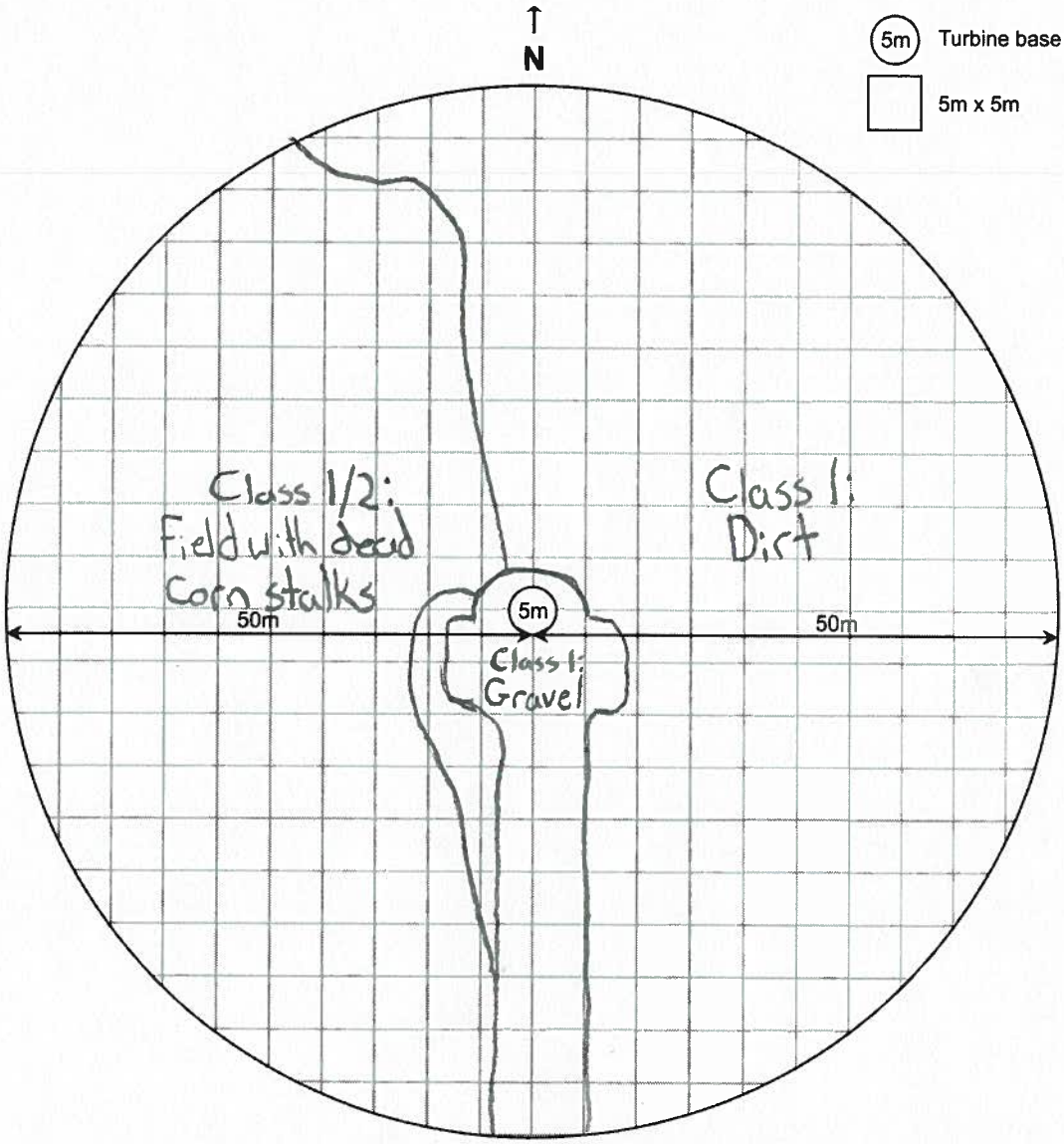
Field Personnel: Nash Colville

Turbine No.: 14

Total Area: 7,854 m²

Total Surveyable Area: 7,854 m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Nash Colville N.C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: May 23rd, 2016

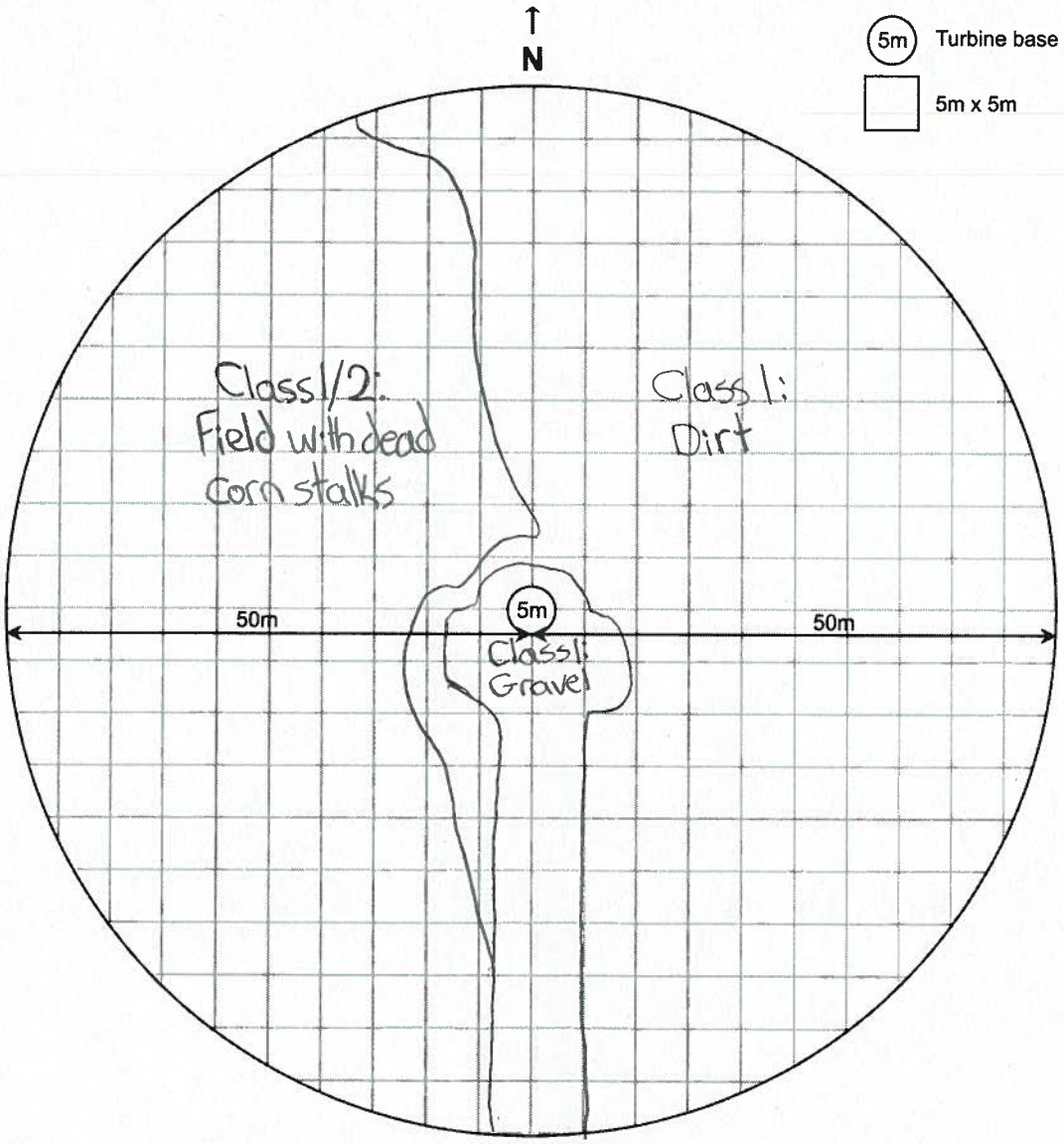
Field Personnel: Nash Colville

Turbine No.: 14

Total Area: 7,854 m²

Total Surveyable Area: 7,854 m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Nash Colville N.C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: July 18th, 2016

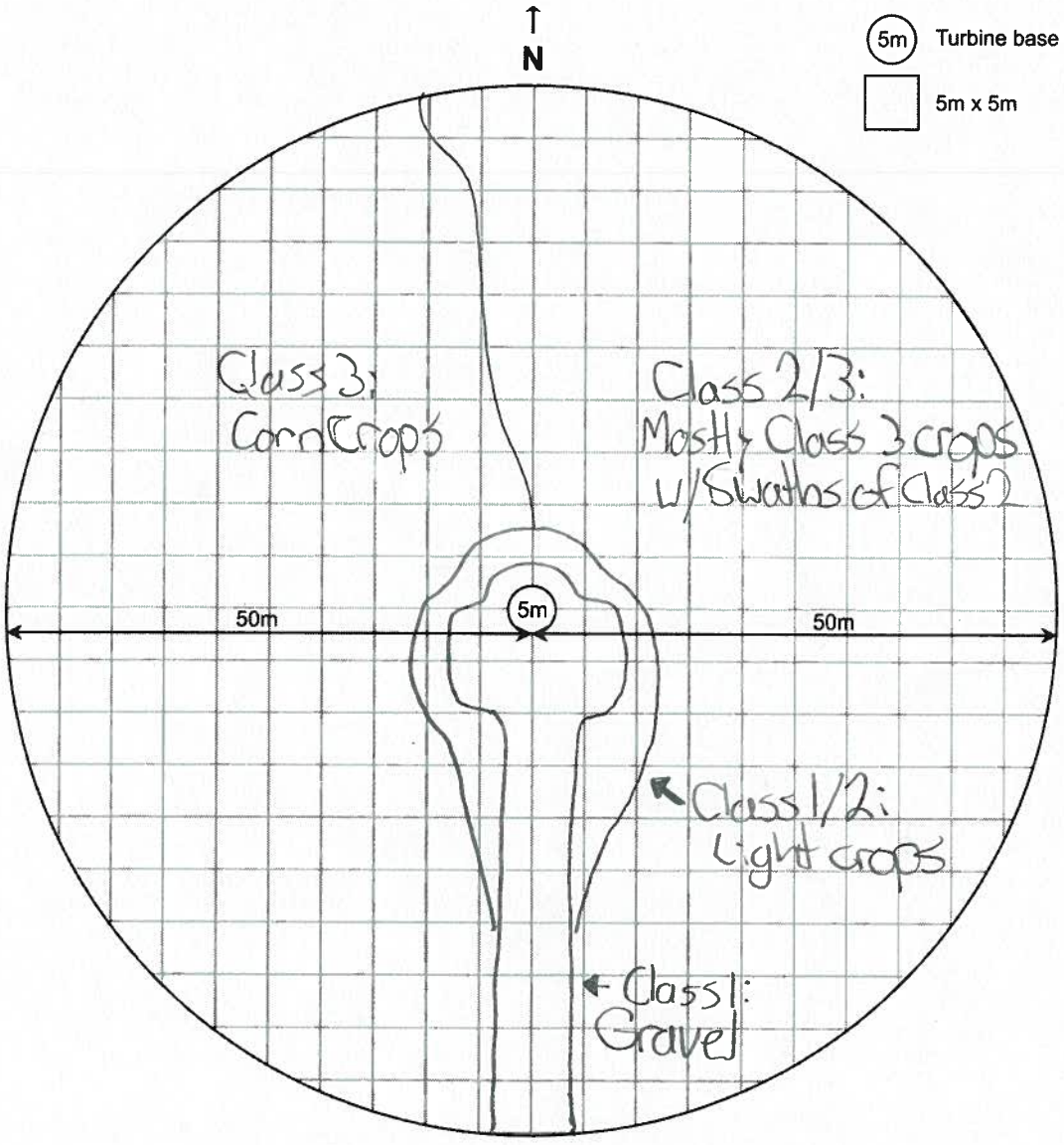
Field Personnel: Nash Colville

Turbine No.: 14

Total Area: 7,854 m²

Total Surveyable Area: ~3000-4000m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: Sept 8, 2016

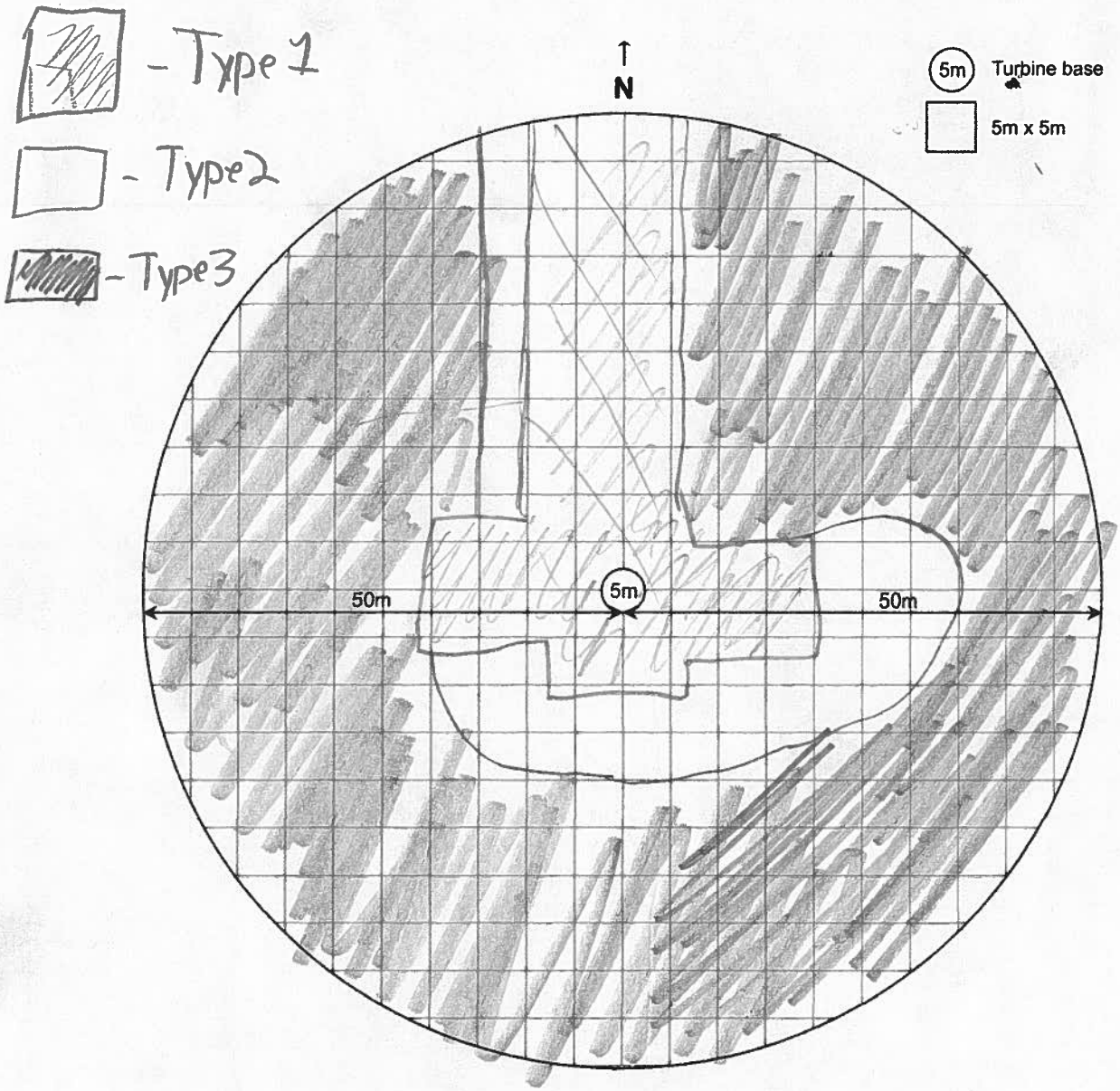
Field Personnel: Dan DiMario

Turbine No.: 14

Total Area: 7,854 m²

Total Surveyable Area: 825m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 3 OF 10

Print Name & Initial: DD Dan D'Ilario (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: May 12th, 2016

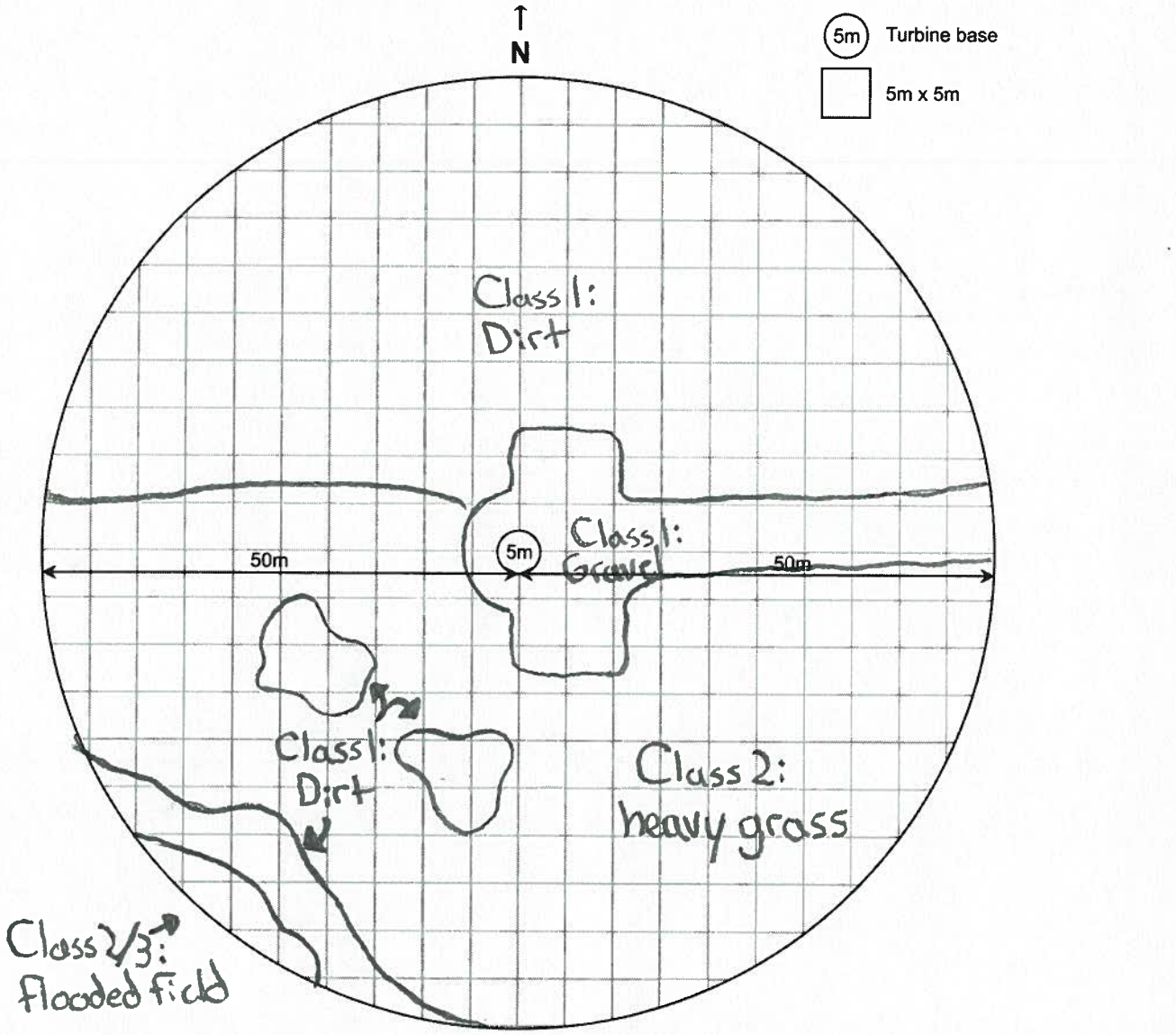
Field Personnel: Nash Colville

Turbine No.: 17

Total Area: 7,854 m²

Total Surveyable Area: 7,854m² ~ 7,754m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Nash Colville N.C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: June 23rd, 2016

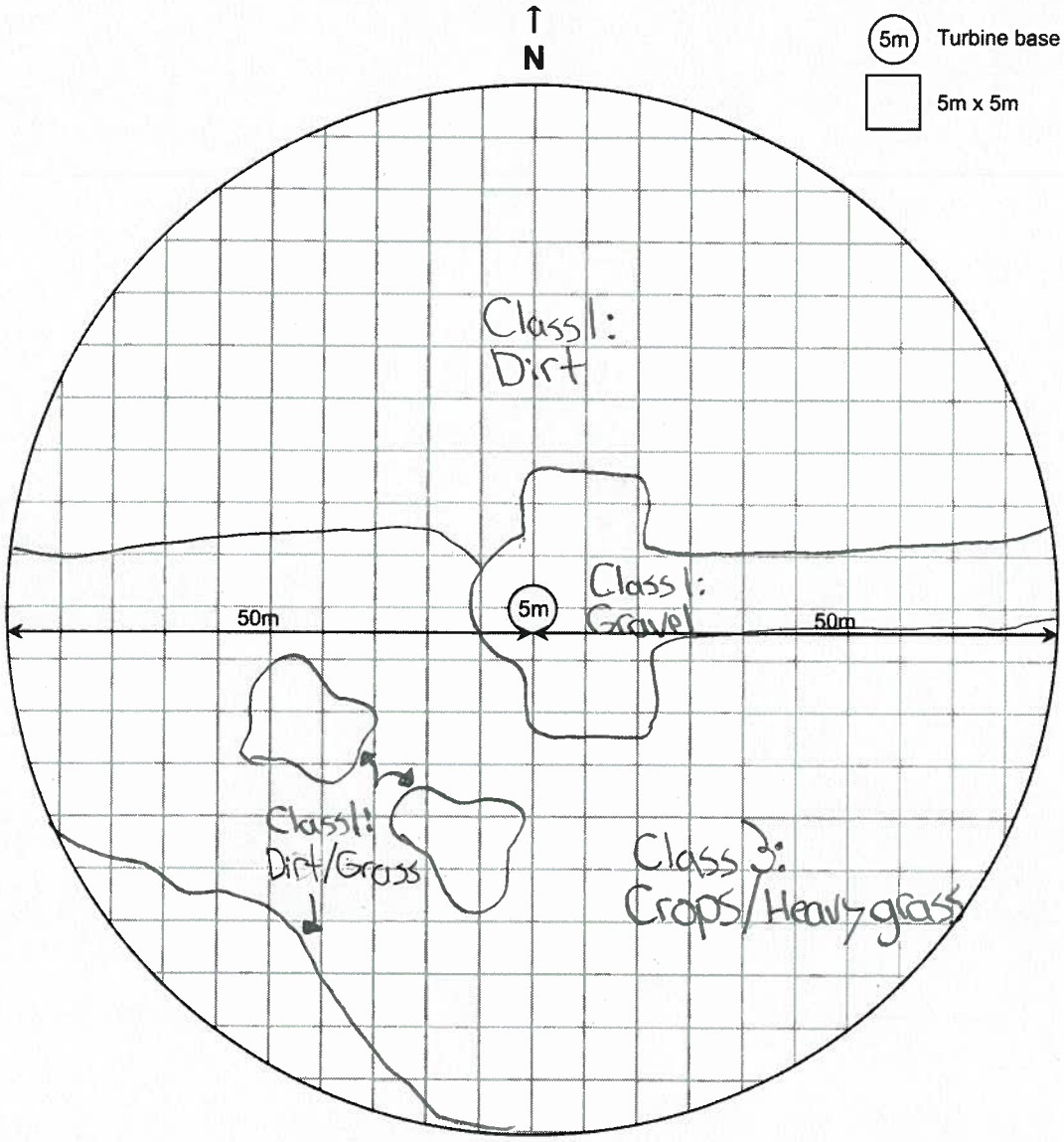
Field Personnel: Nash Colville

Turbine No.: 17

Total Area: 7,854 m²

Total Surveyable Area: ~6500m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Nash C (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: July 18th, 2016

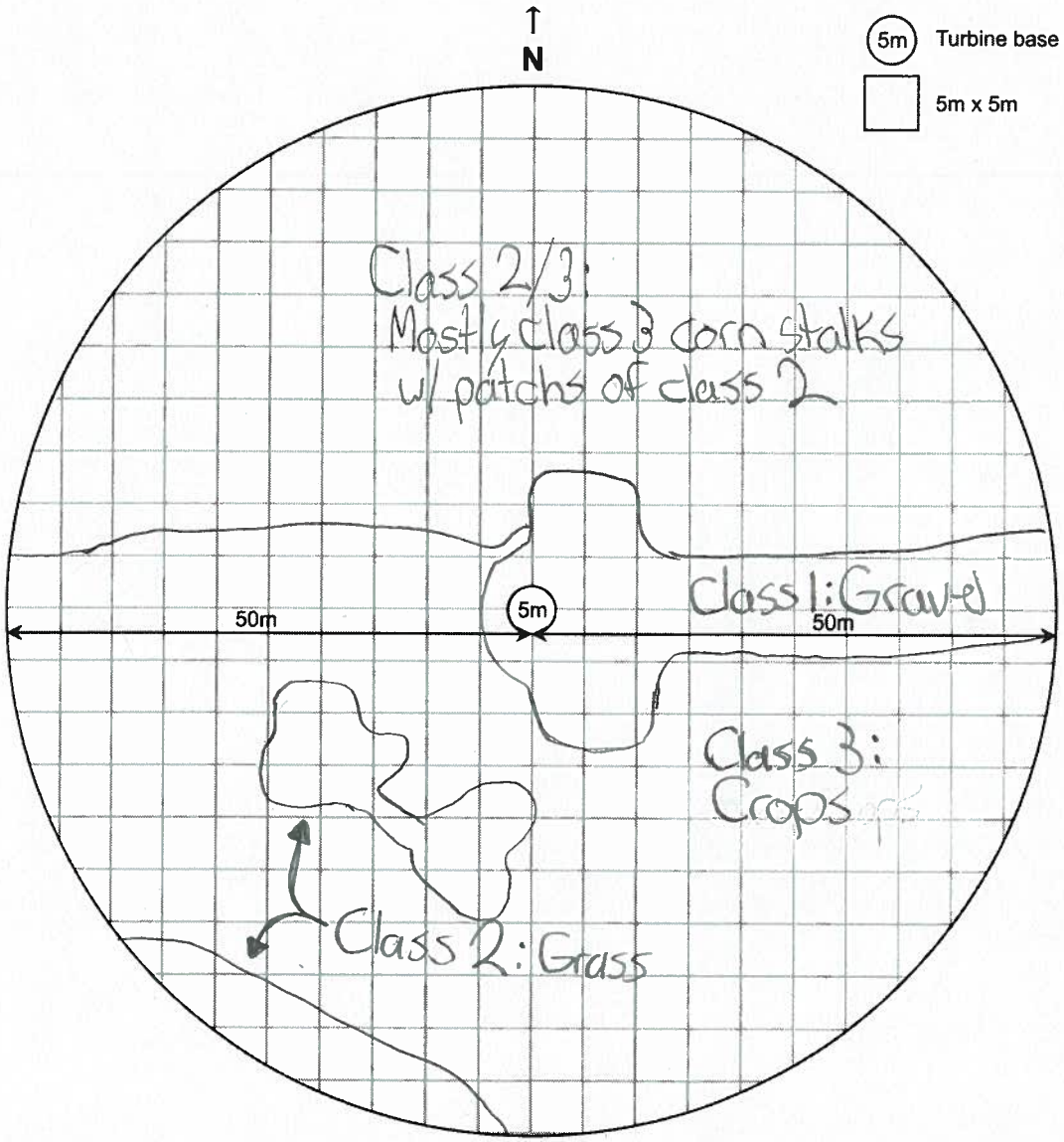
Field Personnel: Nash Colville

Turbine No.: 17

Total Area: 7,854 m²

Total Surveyable Area: ~6000 - 4500m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☒ & legible ☐

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: Sept 8, 2016

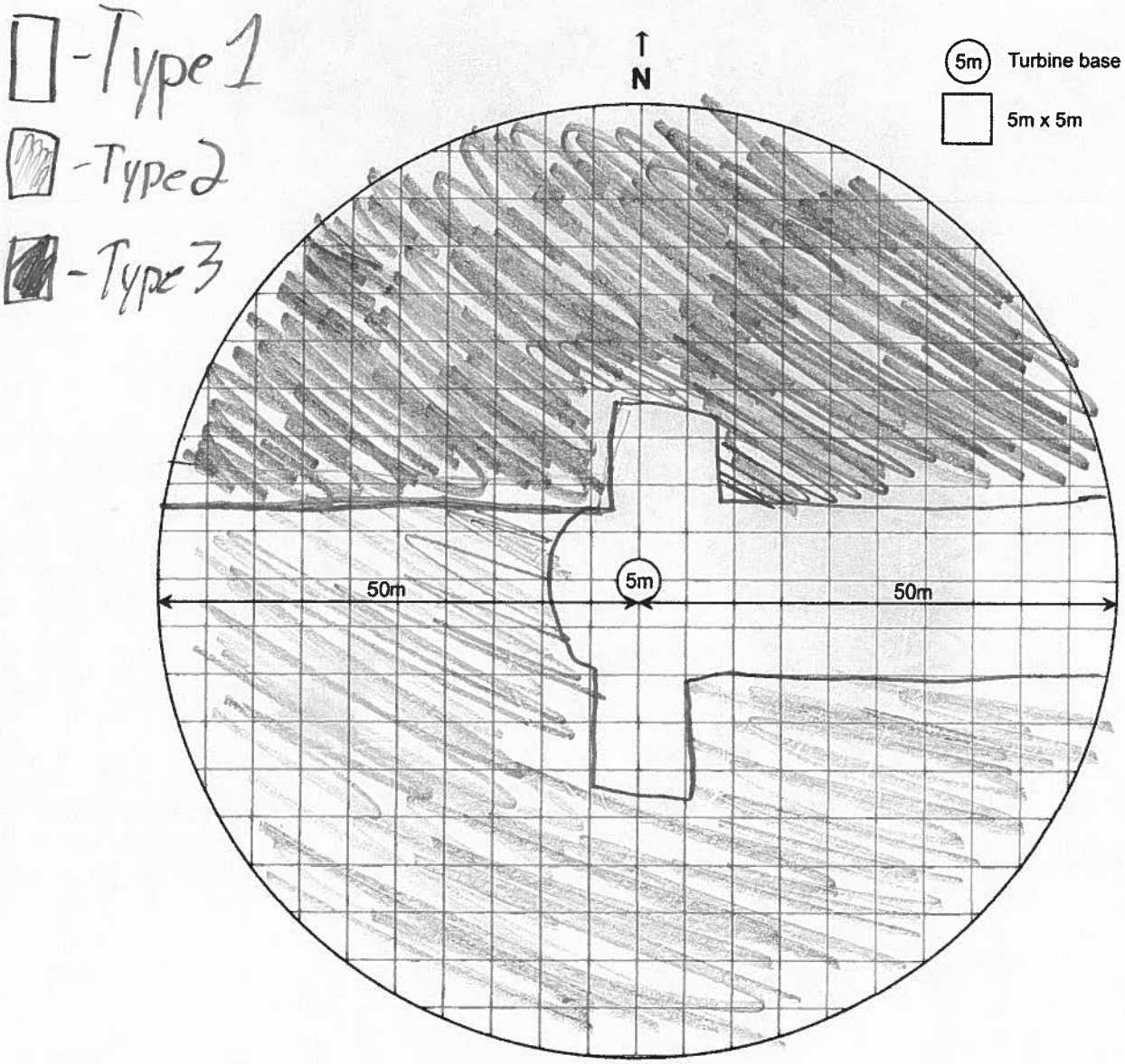
Field Personnel: Dan D'Iano

Turbine No.: 17

Total Area: 7,854 m²

Total Surveyable Area: 3575m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Dan D'Iano (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: May 12th, 2016

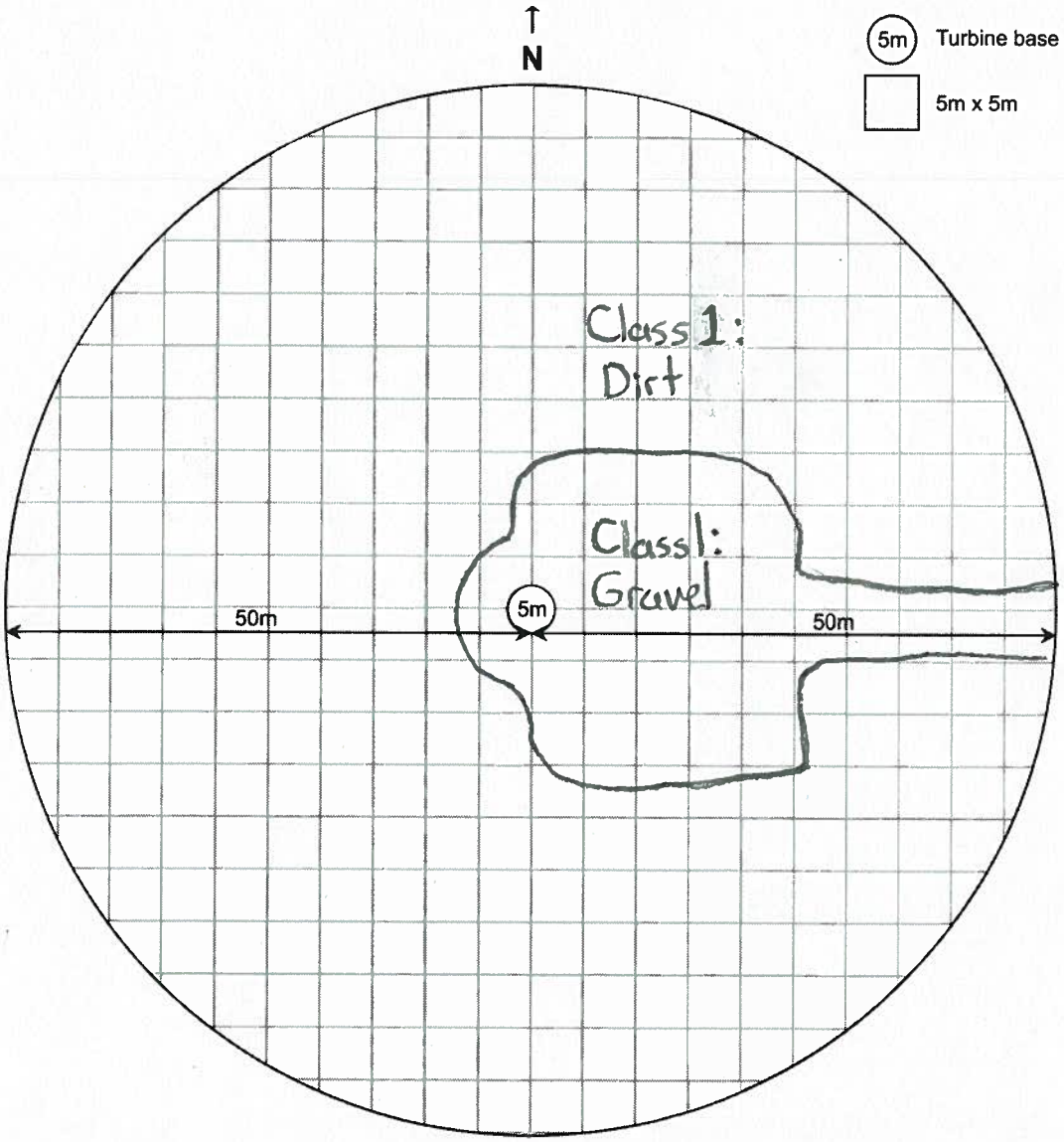
Field Personnel: Nash Colville

Turbine No.: 19

Total Area: 7,854 m²

Total Surveyable Area: 7,854 m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Nash Colville N.C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: June 23rd, 2016

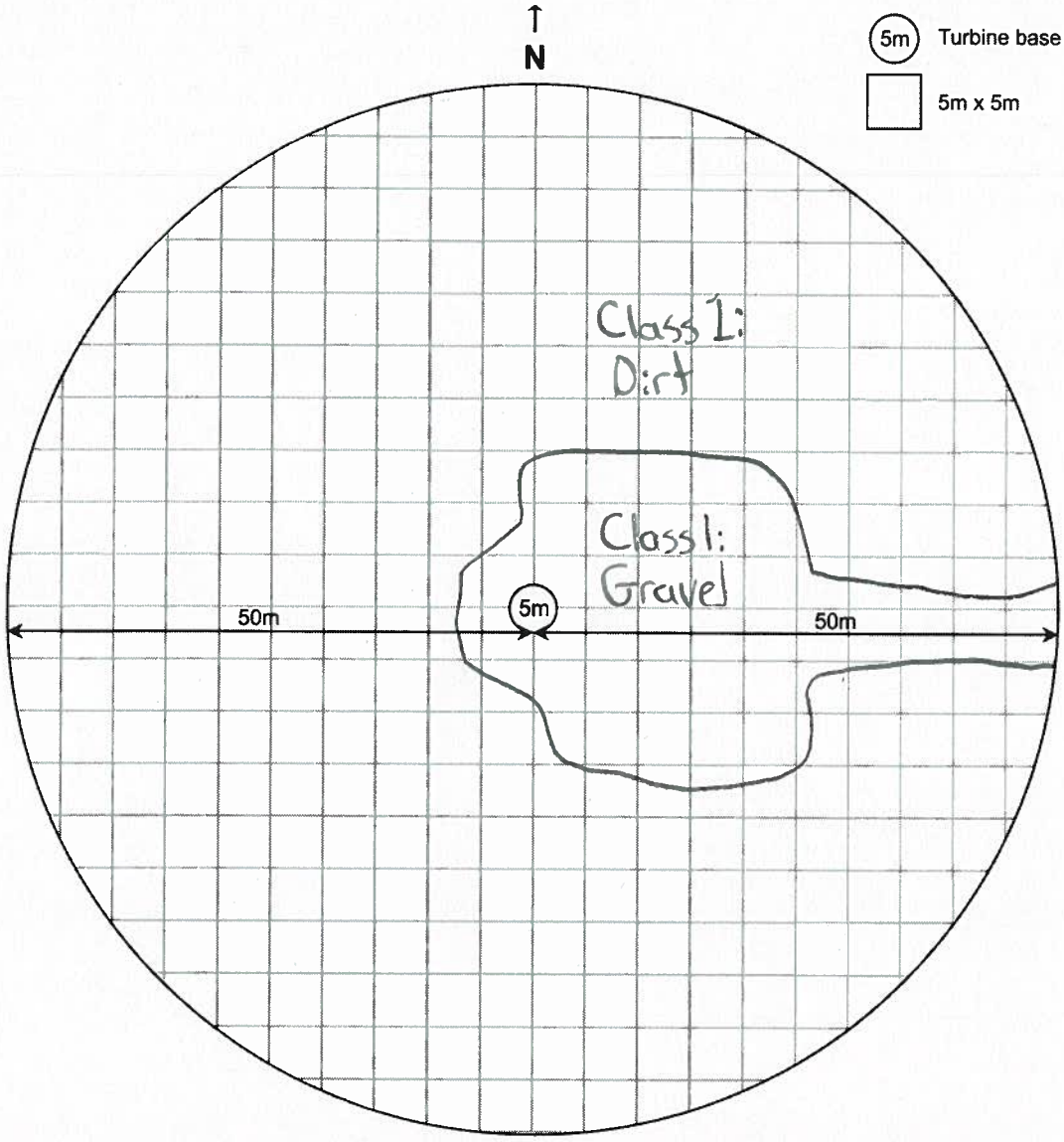
Field Personnel: Nash Colville

Turbine No.: 19

Total Area: 7,854 m²

Total Surveyable Area: 7,854 m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Nash C (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: July 18th, 2016

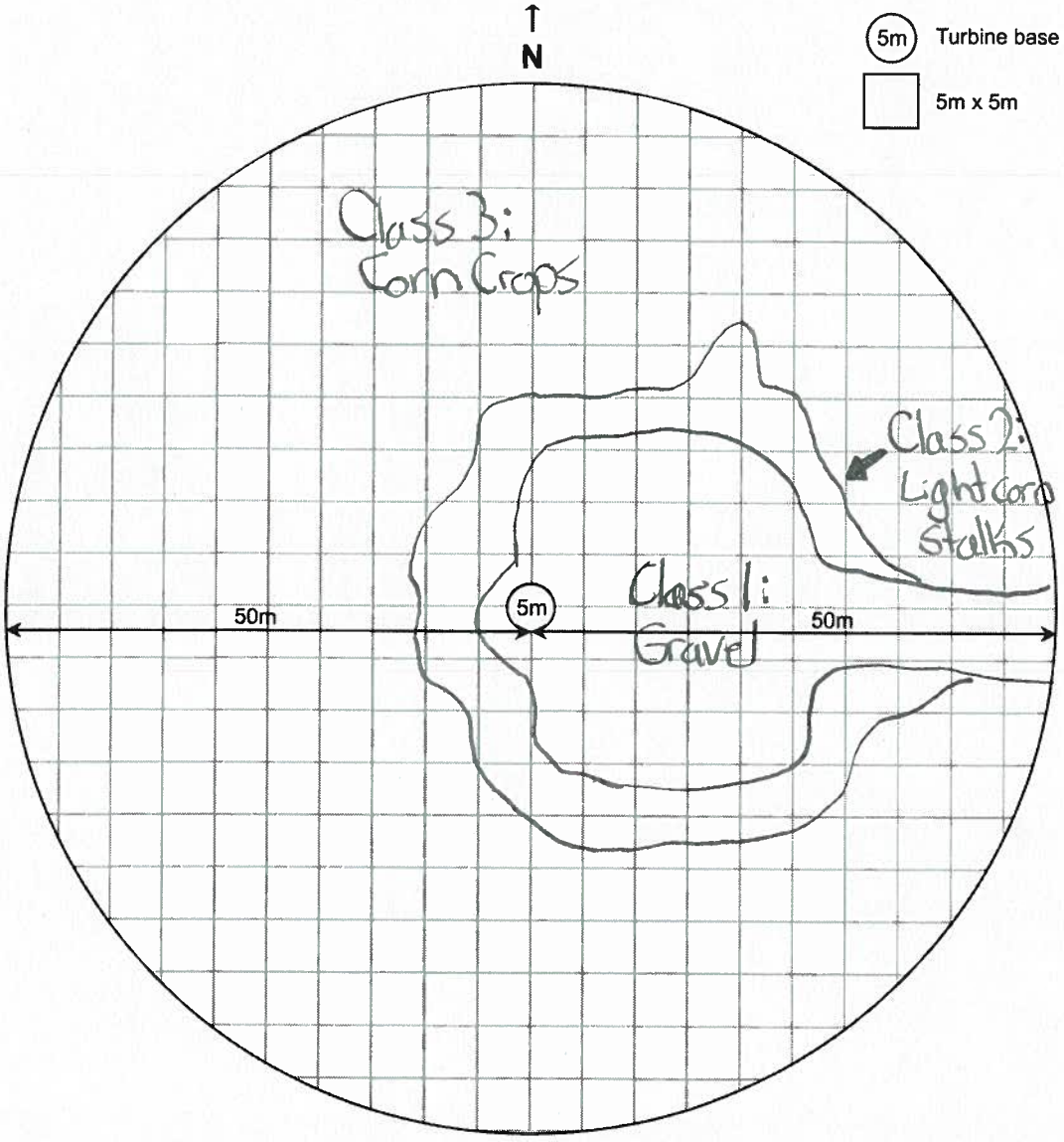
Field Personnel: Nash Colville

Turbine No.: 19

Total Area: 7,854 m²

Total Surveyable Area: ~5500-5000 m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: Sept 8/2016

Field Personnel: Dan Dillon

Turbine No.: 19

Total Area: 7,854 m²

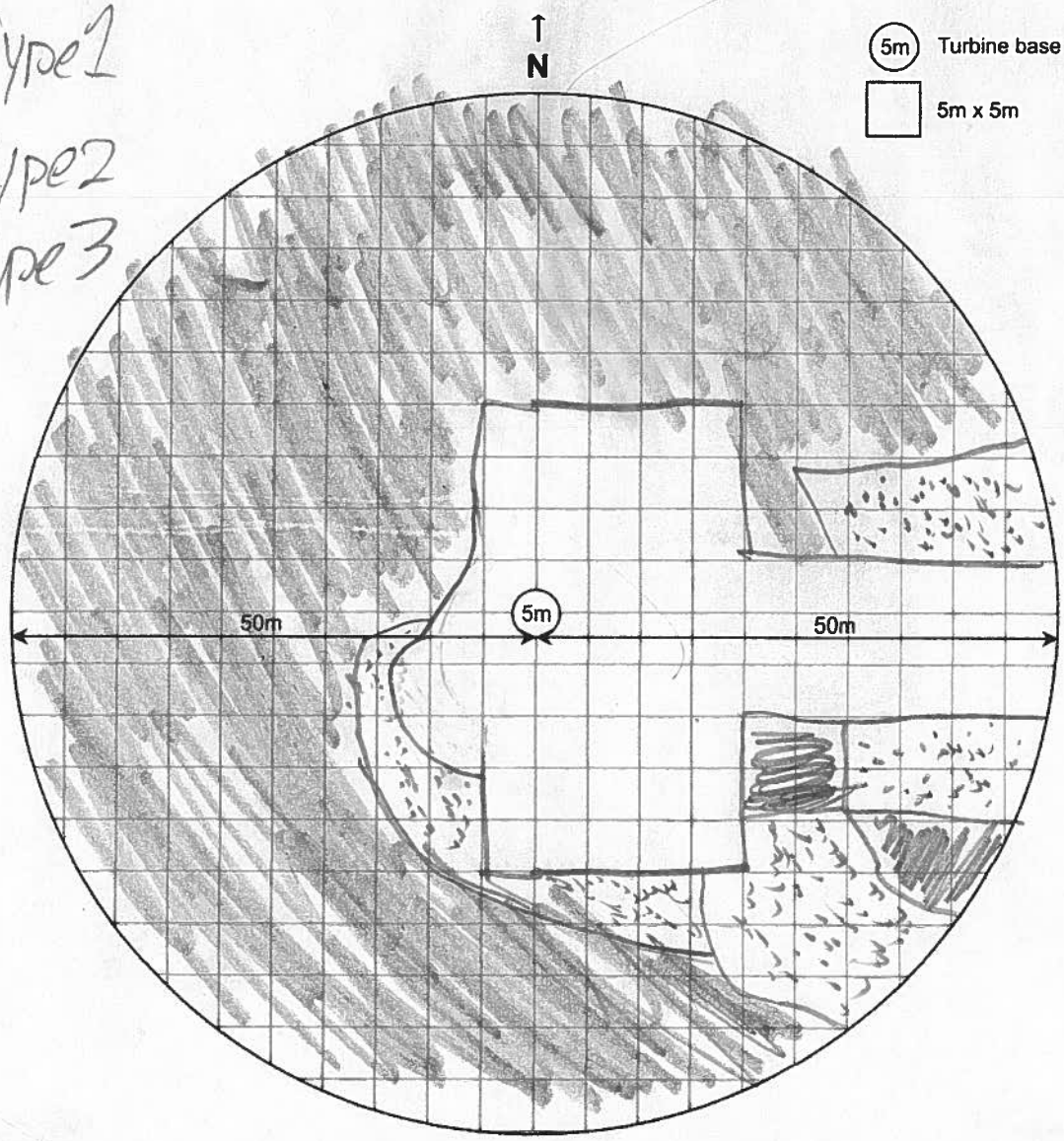
Total Surveyable Area: 1550m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

□ - Type 1

▨ - Type 2

▨ - Type 3



PAGE 9 OF 10

Print Name & Initial: DJ Dan Dillon (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: May 12th, 2016

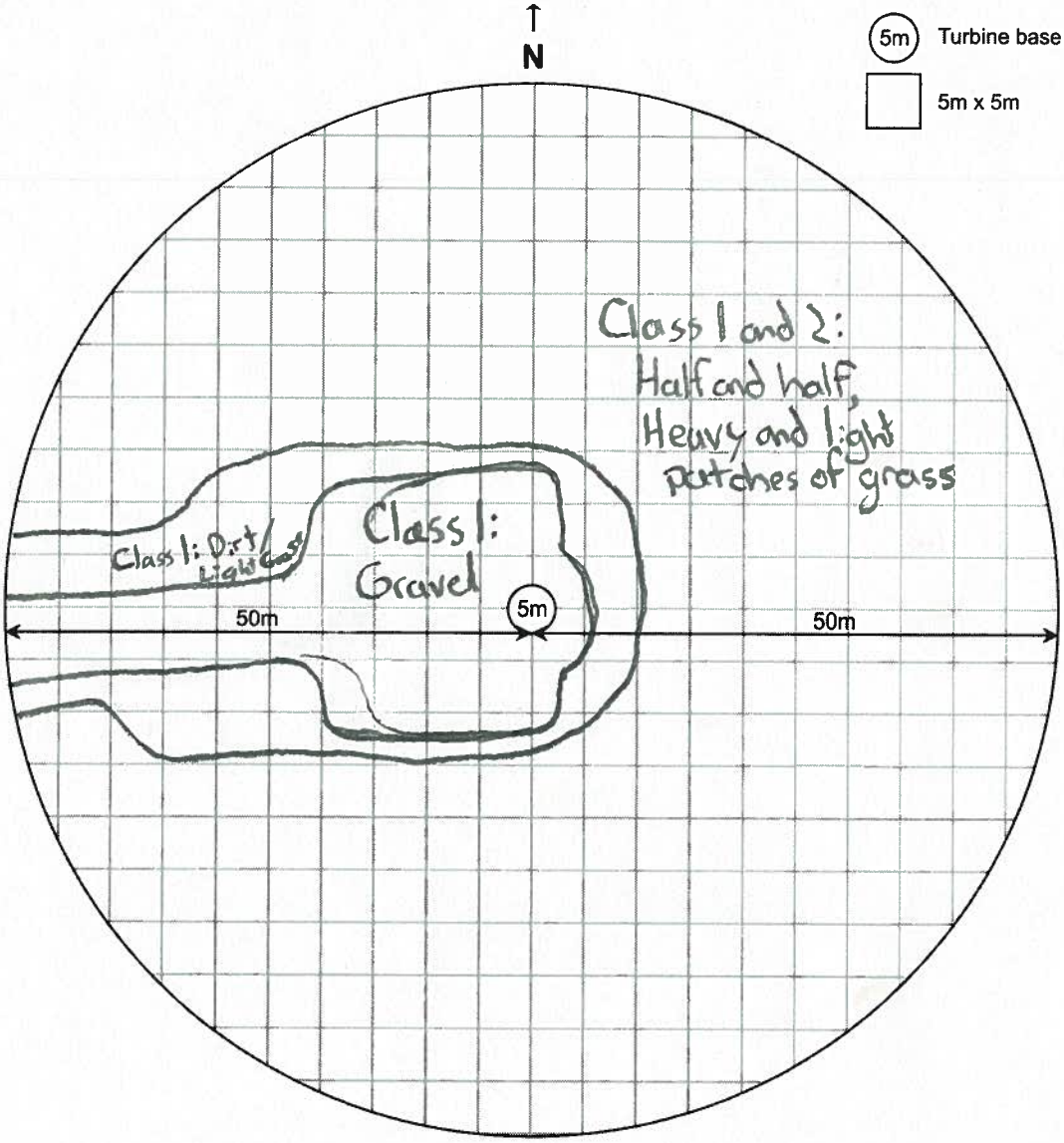
Field Personnel: Nash Colville

Turbine No.: 20

Total Area: 7,854 m²

Total Surveyable Area: 7,854 m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Nash Colville N.C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan AC (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: June 23rd 2016

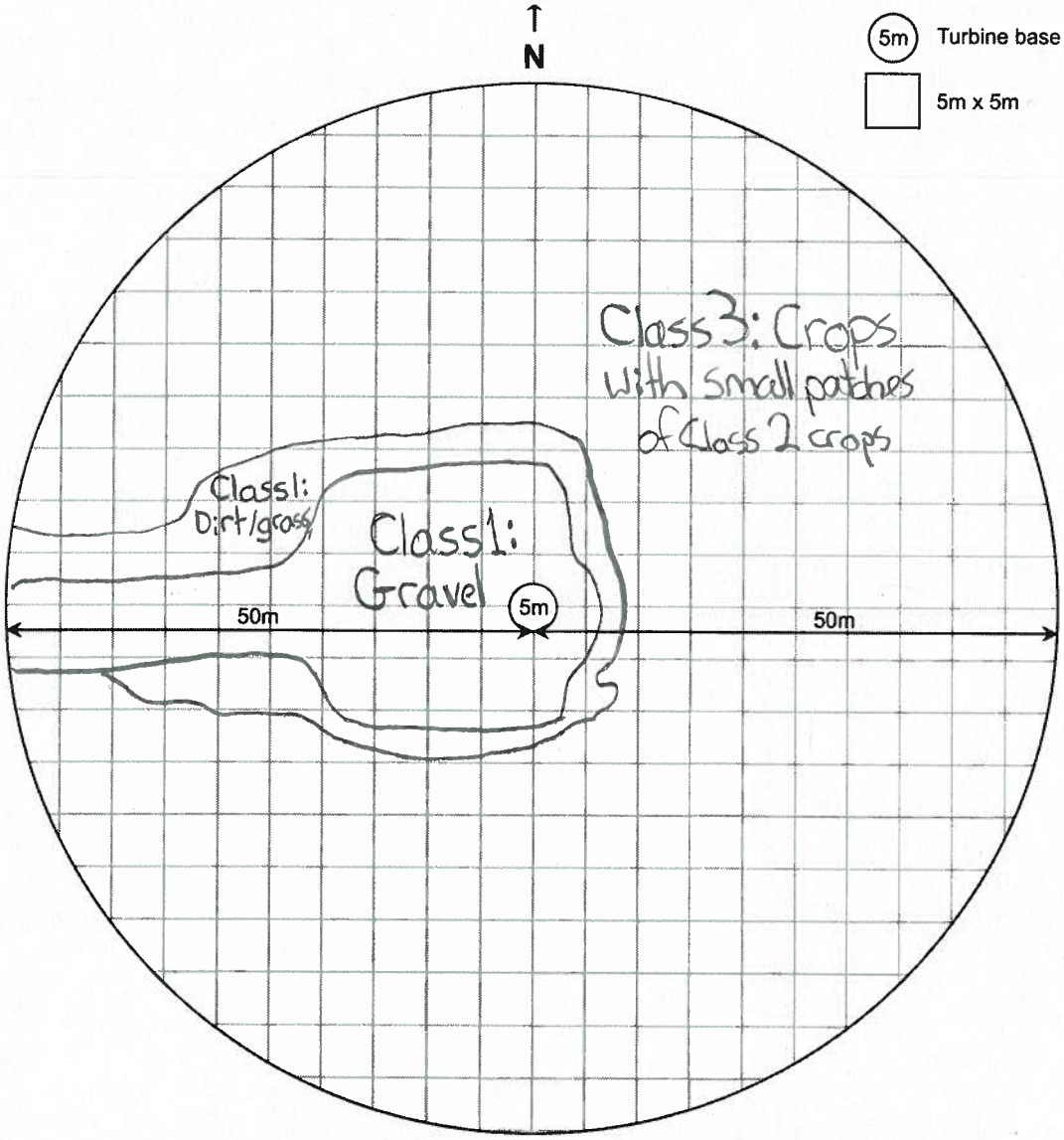
Field Personnel: Nash Colville

Turbine No.: 20

Total Area: 7,854 m²

Total Surveyable Area: ~4500 - 5000 m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Nash Colville N.C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: July 18th, 2016

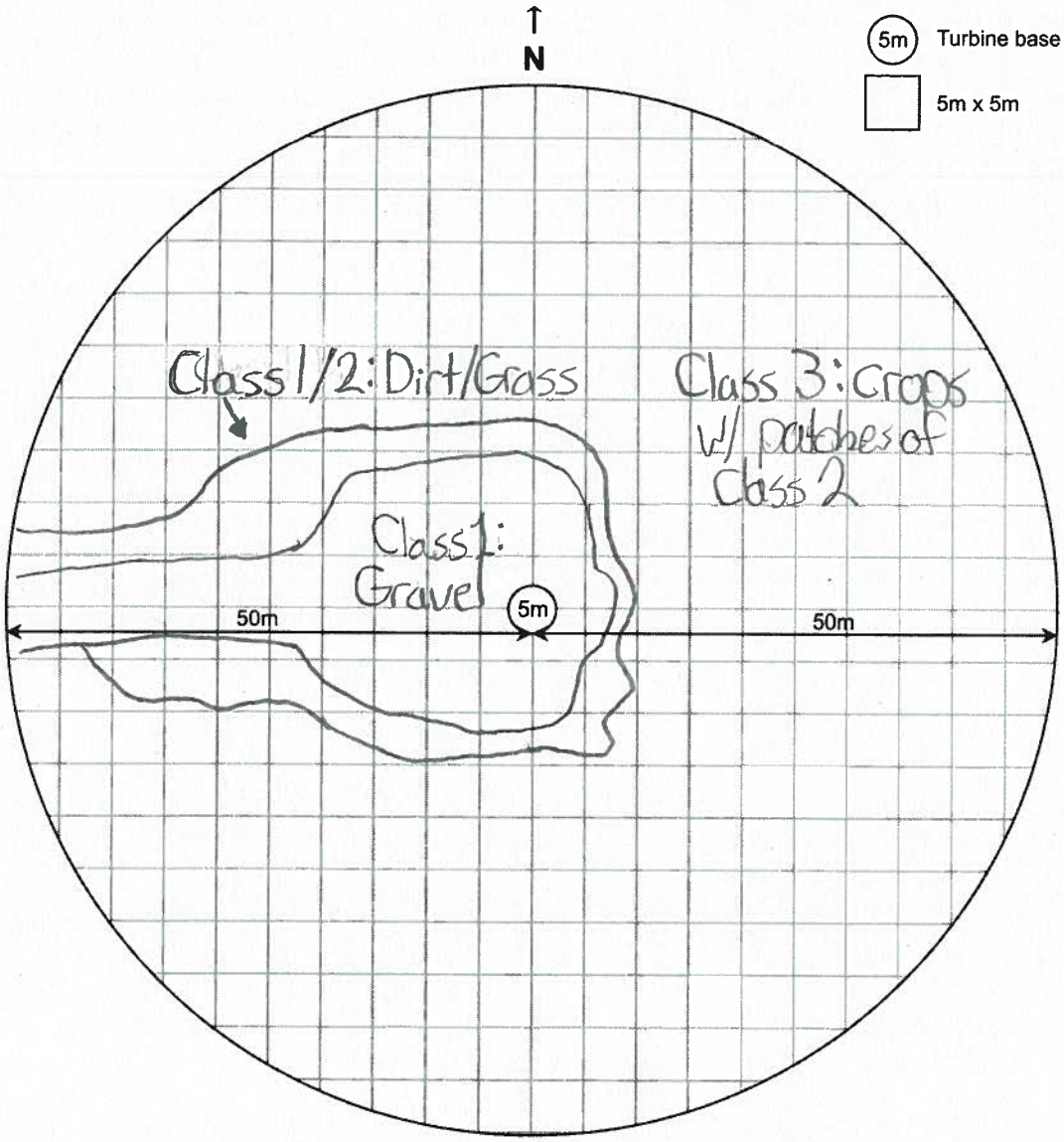
Field Personnel: Nash Colville

Turbine No.: 20

Total Area: 7,854 m²

Total Surveyable Area: ~6000-5000 m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: Sept 8/2016

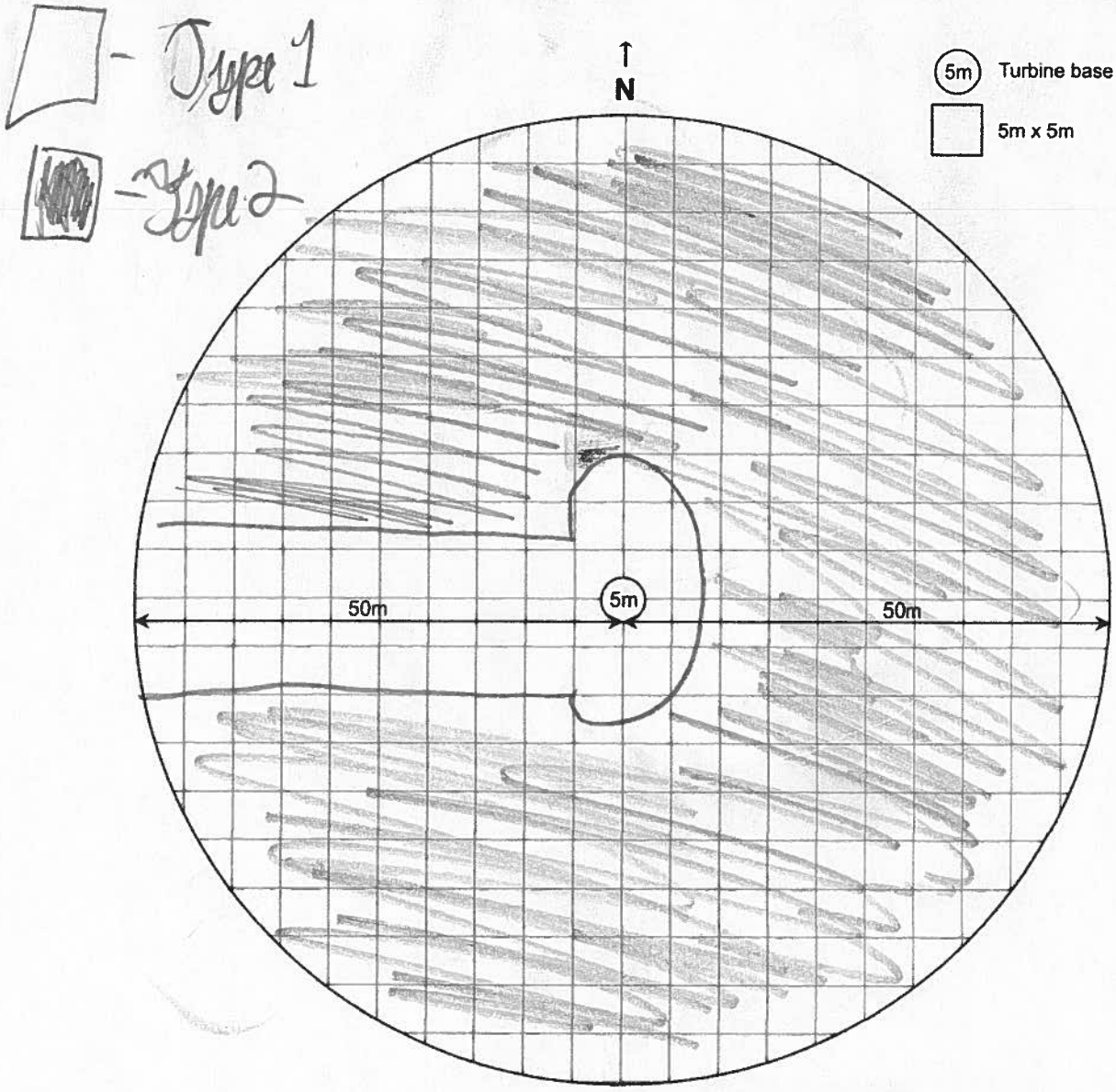
Field Personnel: Dan D'Iorio

Turbine No.: 20

Total Area: 7,854 m²

Total Surveyable Area: 7650m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



Print Name & Initial: Dan D'Iorio (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: May 12th, 2016

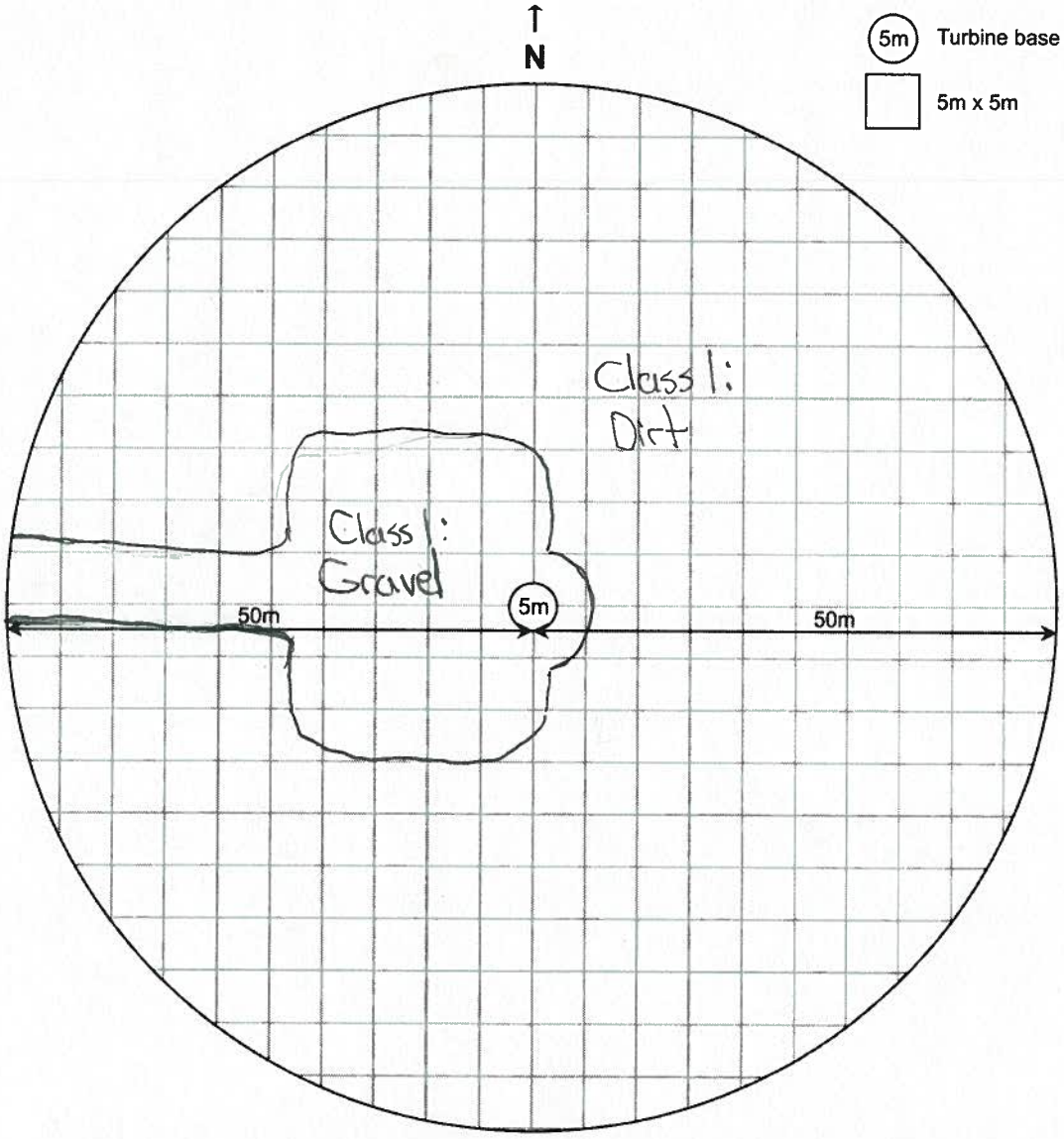
Field Personnel: Nash Colville

Turbine No.: 22

Total Area: 7,854 m²

Total Surveyable Area: 7,854 m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Nash Colville (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: June 23rd, 2016

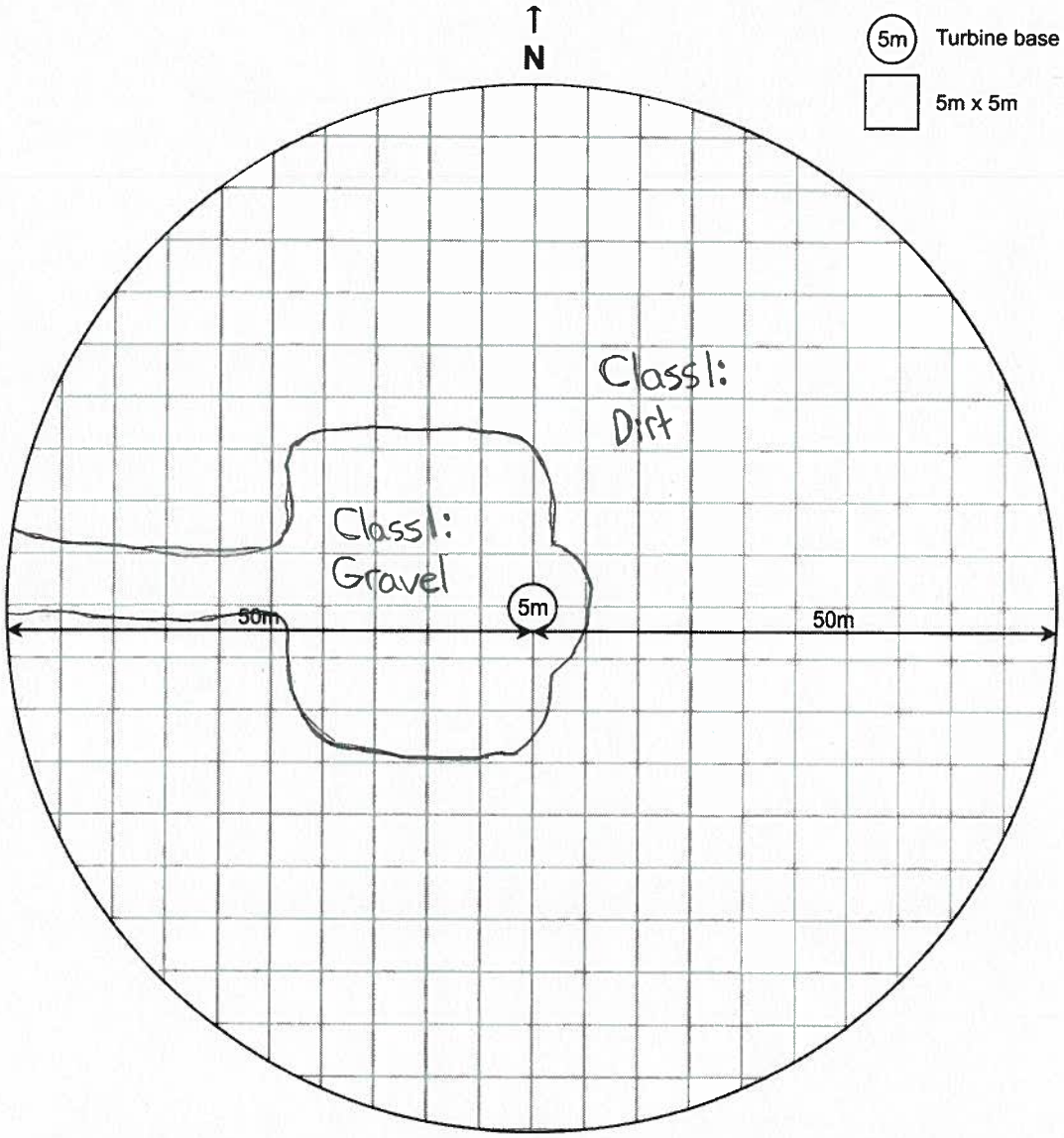
Field Personnel: Nash Colville

Turbine No.: 22

Total Area: 7,854 m²

Total Surveyable Area: 7,854 m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: July 18th 2016

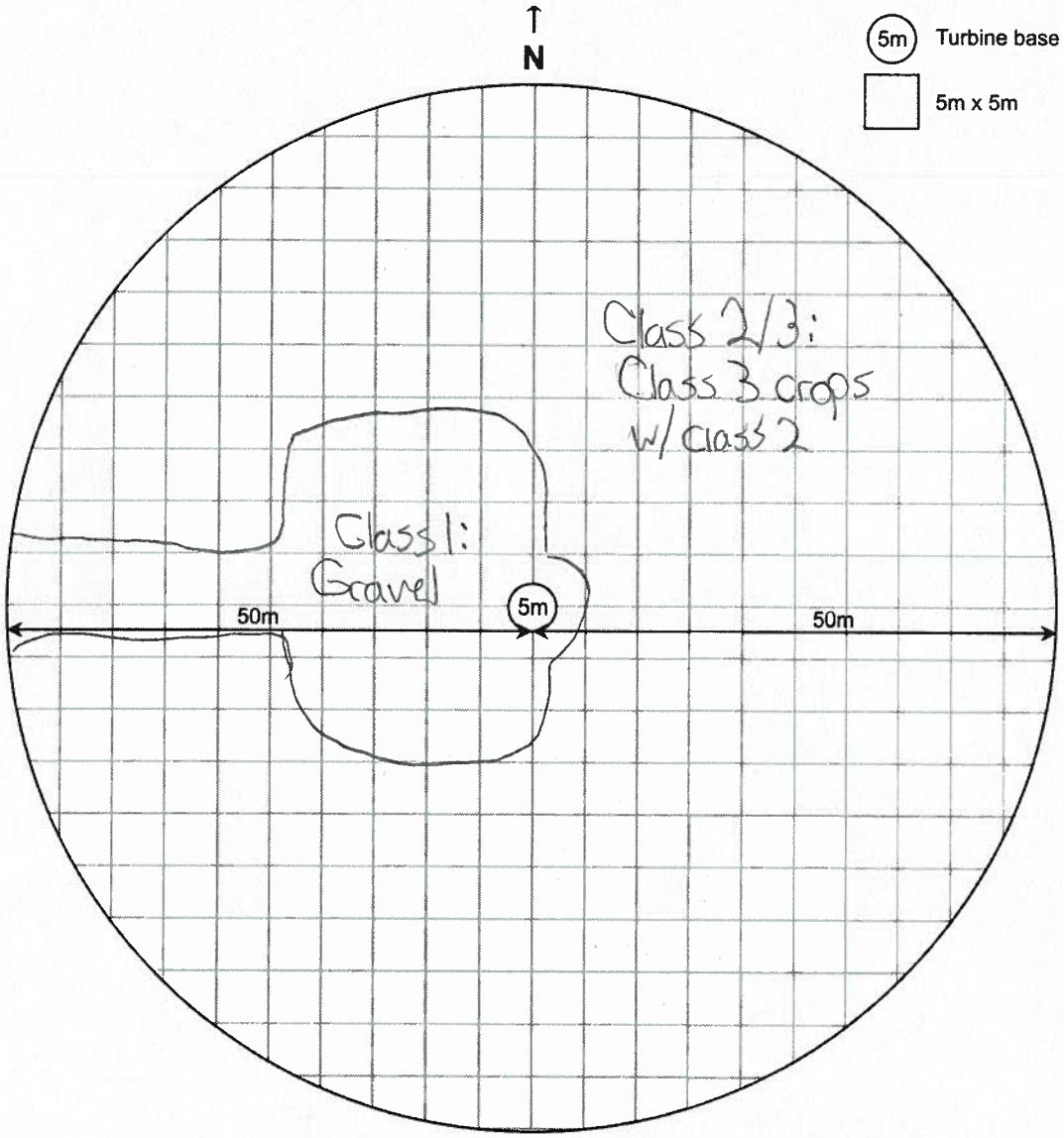
Field Personnel: Nash Colville

Turbine No.: 22

Total Area: 7,854 m²

Total Surveyable Area: ~6000-5500m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: Sept 8, 2016

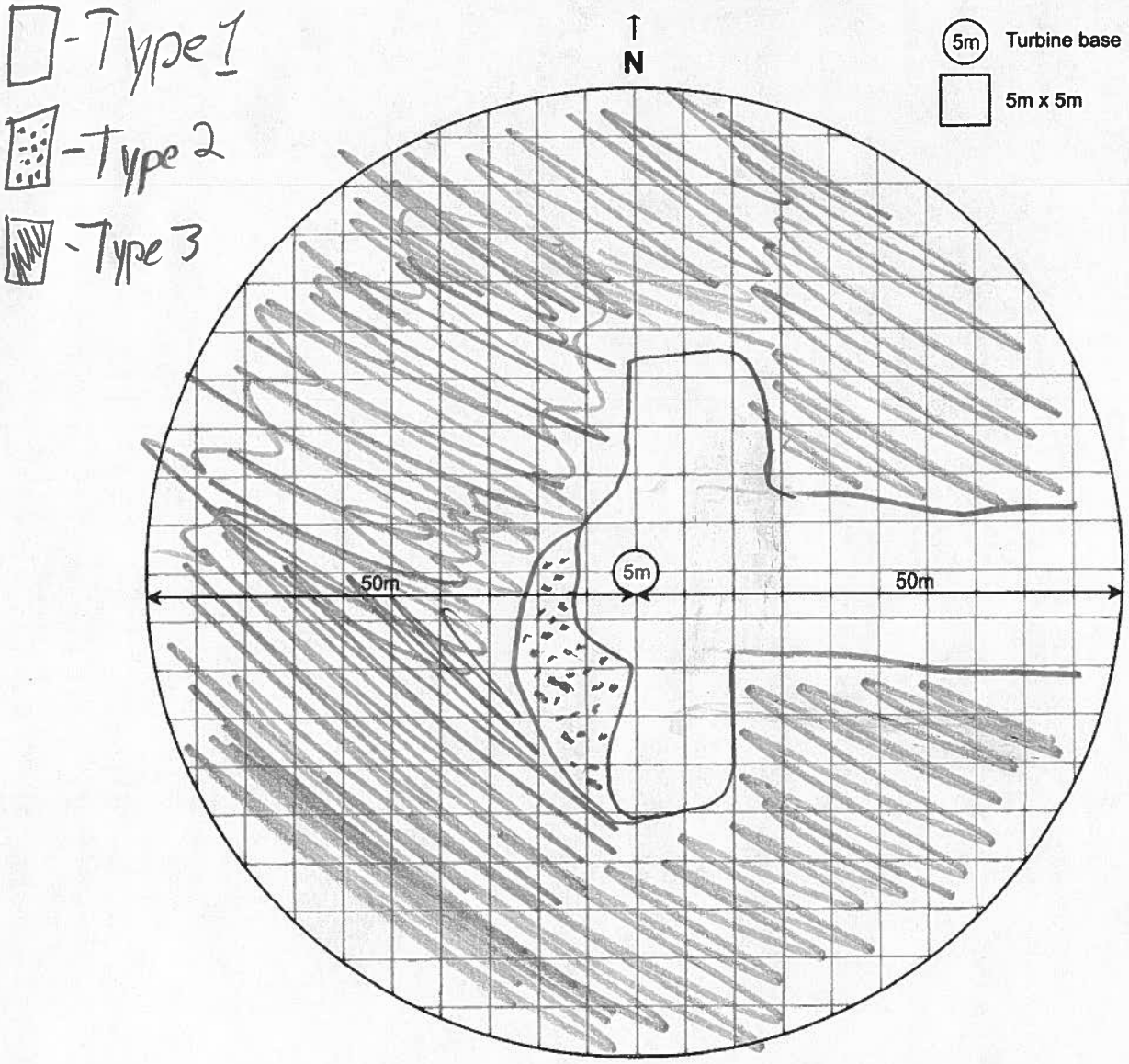
Field Personnel: Dan Dilario

Turbine No.: 22

Total Area: 7,854 m²

Total Surveyable Area: 900m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Dan Dilario (field notes author)

Quality Control: This form is complete ☐ & legible ☑

Print Name & Initial: Anna Comparelli (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: May 12th, 2016

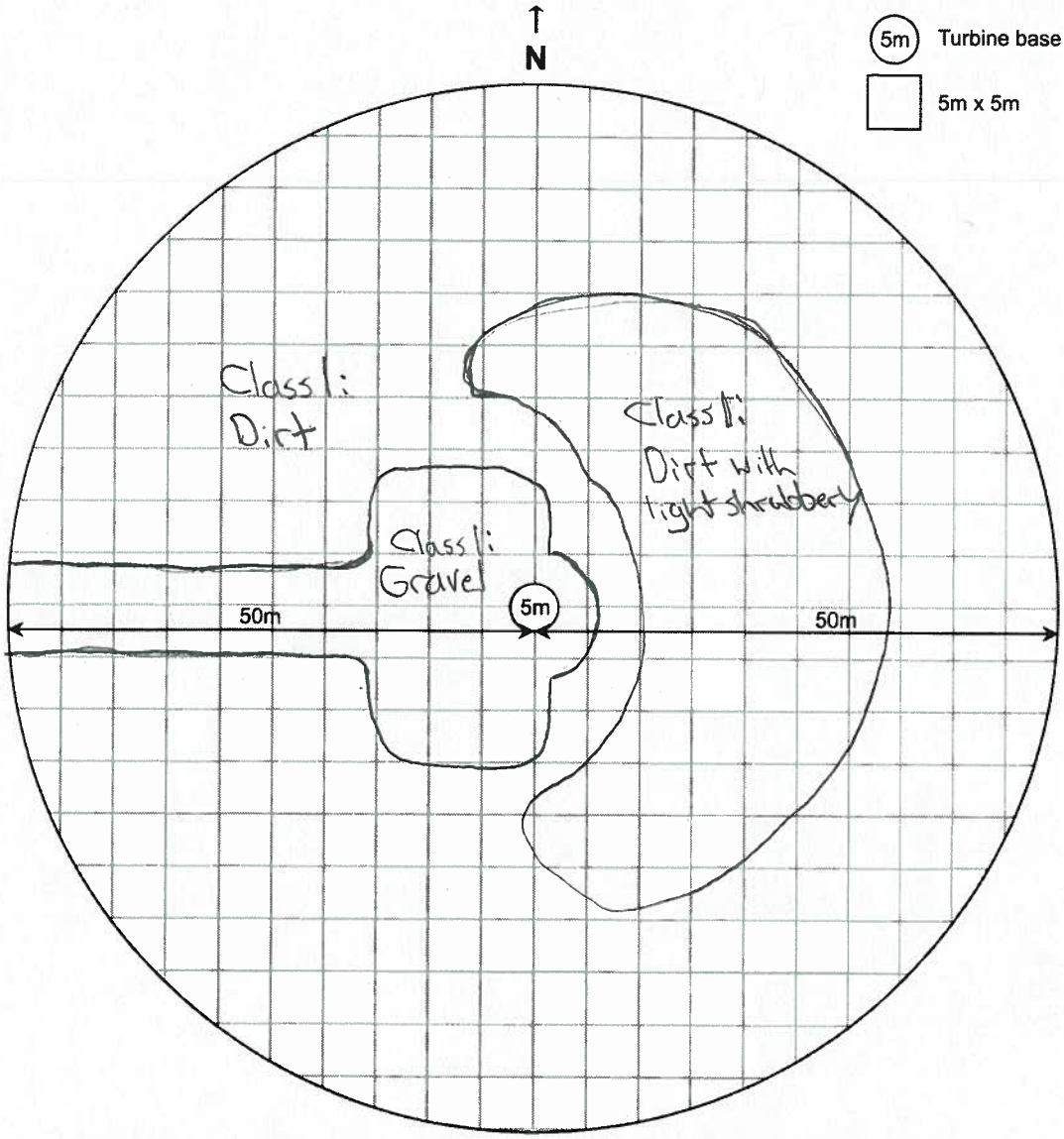
Field Personnel: Nash Colville

Turbine No.: 27

Total Area: 7,854 m²

Total Surveyable Area: 7,854 m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Nash Colville (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: June 23rd, 2016

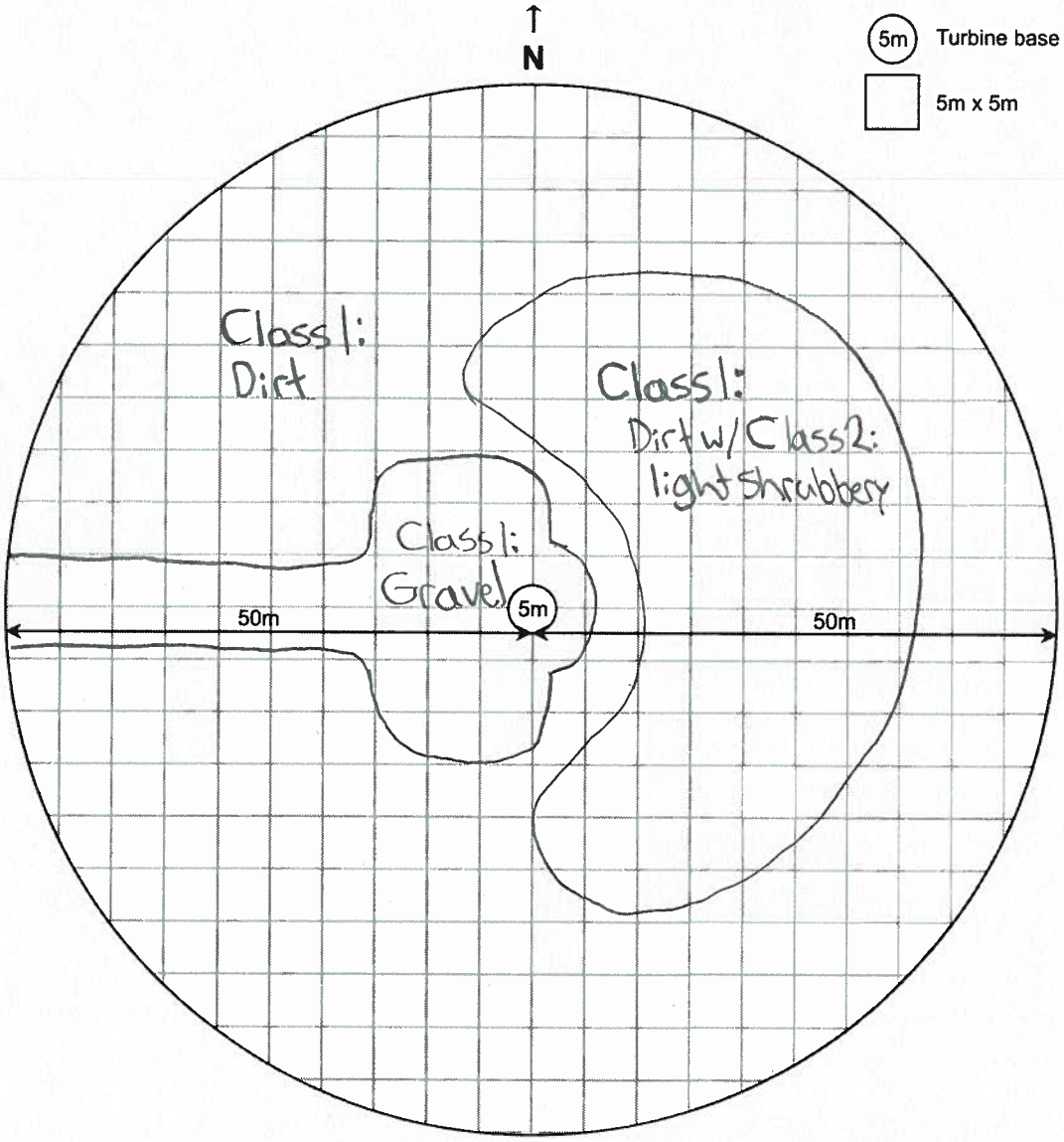
Field Personnel: Nash Colville

Turbine No.: 27

Total Area: 7,854 m²

Total Surveyable Area: 7,854m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Nash C (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: July 18th 2016

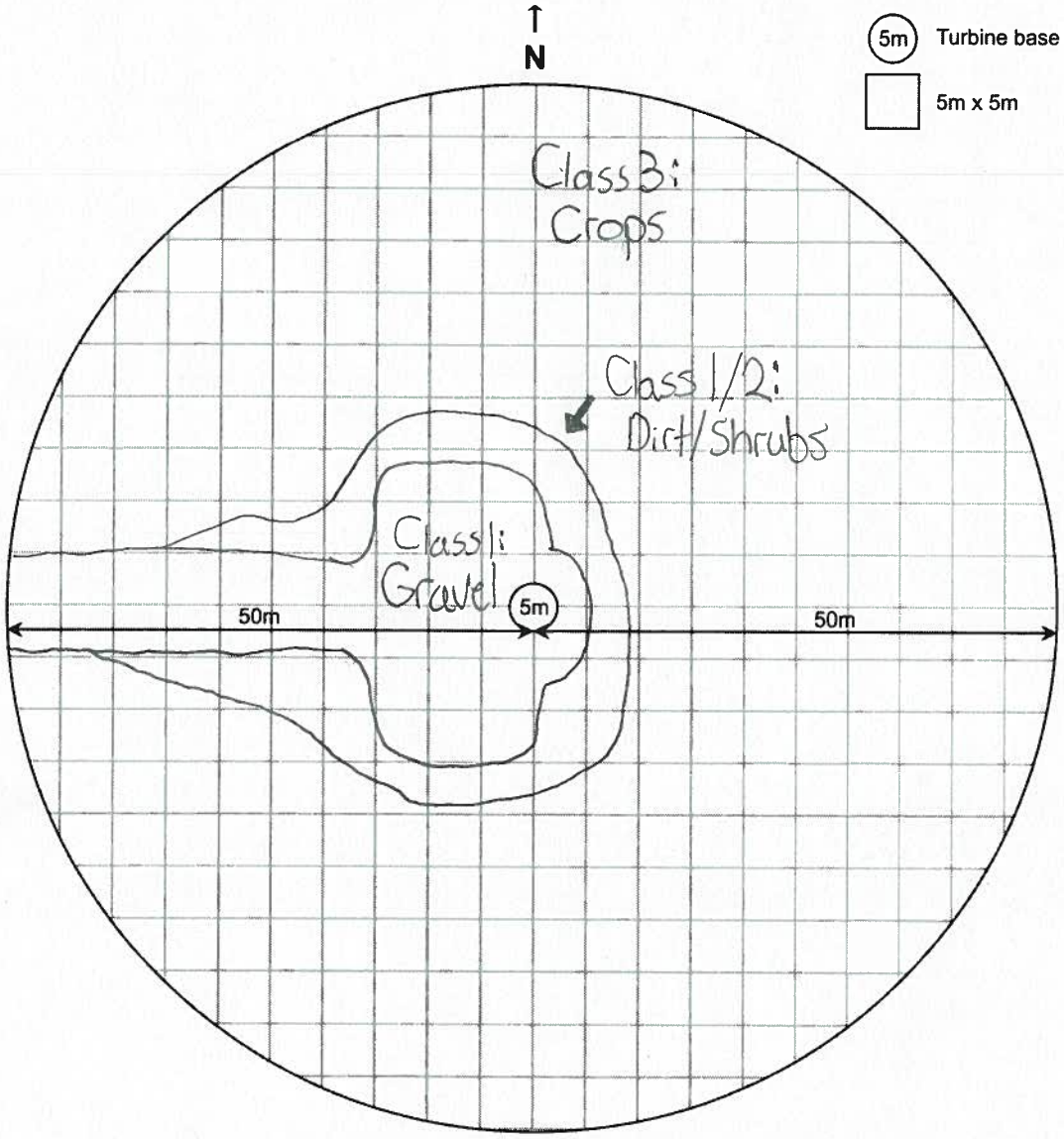
Field Personnel: Nash Colville

Turbine No.: 27

Total Area: 7,854 m²

Total Surveyable Area: ~6000-5000 m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 1 OF 1

Print Name & Initial: Nash C (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Carcass Search Area Grid
50 m Radius

Project Number: 160961067

Project Name: Adelaide Wind Farm

Date Initiated: Sept 8th/2016

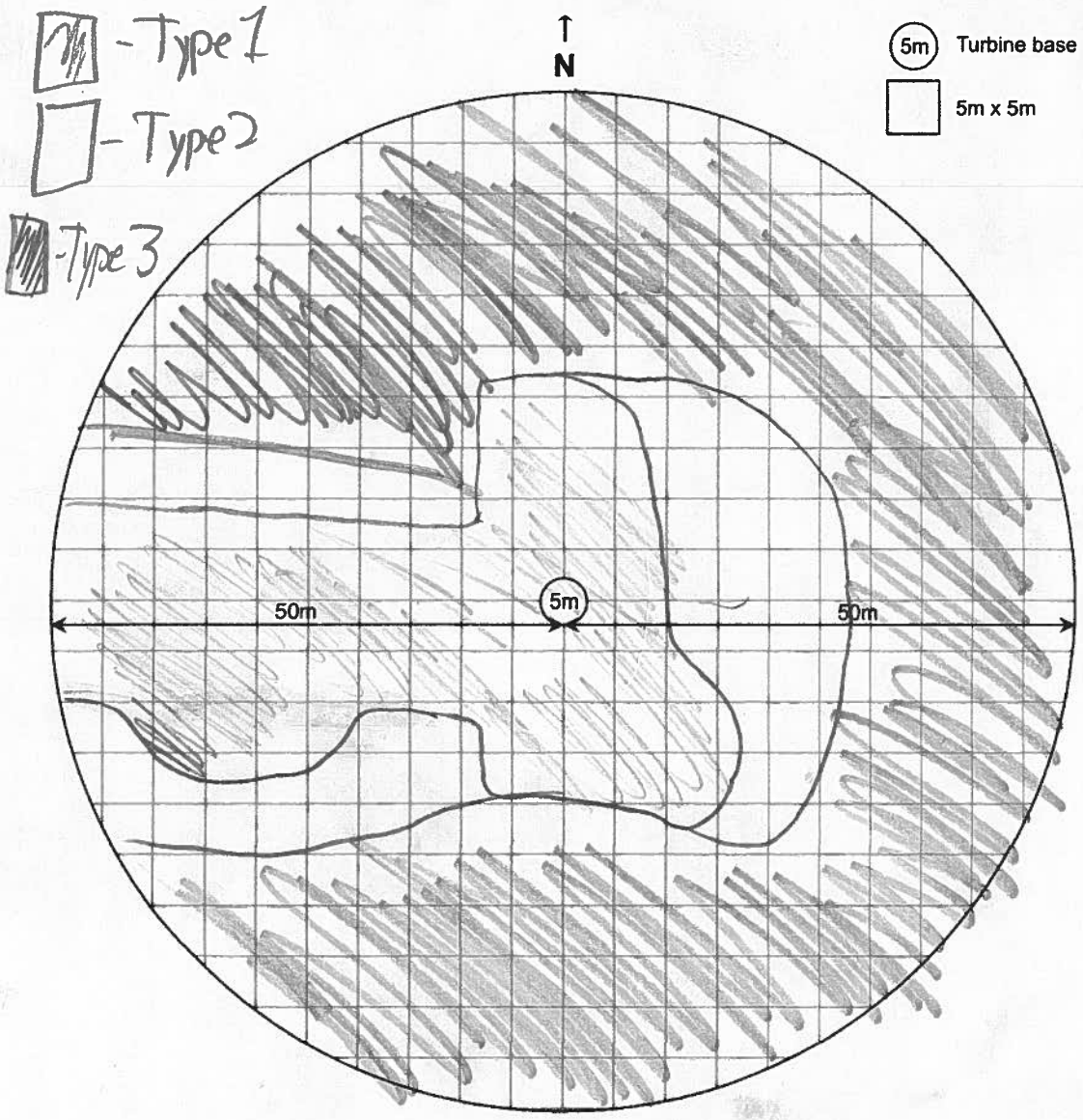
Field Personnel: Don Dlanic

Turbine No.: 27

Total Area: 7,854 m²

Total Surveyable Area: 1550m²

% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)



PAGE 5 OF 10

Print Name & Initial: DD Don Dlanic (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: May 2nd 2016 Personnel: Nash Colville

Start/End Time: 10:30am / 4:05pm

Weather Conditions: 12°C (TEMP (°C)) | 9Km / NE (WIND speed/direction) | Partly Cloudy (CLOUD) | >3mm (PPT) | 5-10mm (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	7854	10:30	11:00	30min					E	N								
7	11	11:00	11:30	11					E	N								
11	11	11:35	12:05	11					E	N								
12	11	12:10	12:40	11	Red-tailed Hawk	U		17	E 044 7870	N 476 3320	Advanced	≥ 48hrs	N/A due to decomp.	41m	5	Grass	2	
14	11	12:40	1:10	11					E	N								
17	7293	1:15	1:45	11					E	N								
19	7649	1:50	2:20	11					E	N								
20	7854	2:25	2:55	35min					E	N								
22	11	3:00	3:30	30min					E	N								
27	11	3:35	4:05	11					E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash Colville NC. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: May 5th 2016 Personnel: Nash Colville

Start/End Time: 10:00 am / 4:00 pm

Weather Conditions: 16°C (TEMP (°C)) 22 Km/h / SE (WIND speed/direction) Partly Cloudy (CLOUD) 0 (PPT) 0 (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	7854	10:05	10:35	30min					E	N								
7	7854	10:40	11:10	11					E	N								
11	7854	11:15	11:45	11					E	N								
12	7854	11:50	12:20	11					E	N								
14	7854	12:25	12:55	11					E	N								
17	7586	1:00	1:30	11					E	N								
19	7723	1:35	2:05	11					E	N								
20	7854	2:10	2:45	35min					E	N								
22	7854	2:45	3:15	30min					E	N								
27	7854	3:20	3:50	11					E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash Colville N.C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Carrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: May 9th 2016 Personnel: Nash Colville

Start/End Time: 9:45 am / 5:30 pm

Weather Conditions: 14 (TEMP (°C)) | 17 km/h / SE (WIND speed/direction) | Overcast (CLOUD) | <1m (PPT) | <1m (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh | Moderate | Complete

Early | Advanced | Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	7854	10:00	10:35	35min					E	N								
7	11	10:40	11:20	30min	Silver haired bat	f	42.58mm	17	E 044 9626	N 476 2179	Early	24hrs	broken wing	41m	NW	Dirt	1	T7050920
11	11	11:25	11:55	30min					E	N								
12	11	12:00	12:30	30min					E	N								
14	11	12:30	1:00	30min					E	N								
17	7629	1:55	2:30	35min					E	N								
19	7771	2:35	3:05	30min					E	N								
20	7854	3:10	3:40	30min					E	N								
22	11	3:40	4:20	30min					E	N								
27	11	4:25	5:00	35min					E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash Colville N.C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: May 12th 2016 Personnel: Nash Caluille

Start/End Time: 10:30am / 6:45pm

Weather Conditions: 16°C (TEMP (°C)) 20km/h / NE (WIND speed/direction) Partly cloudy (CLOUD) <1m (PPT) <1m (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	7854	10:40	11:20	40min					E	N								
11	"	11:30	12:00	30min					E	N								
12	"	12:10	12:45	35min	(tester)			17	E 044 7815	N 476 3404				16m	W	Dirt	1	
14	"	12:50	1:20	30min					E	N								
17	7702	1:30	2:00	30min	(tester)			17	E 044 4500	N 476 5068				7m	W	Dirt	1	
19	7854	2:10	2:40	30min					E	N								
20	"	2:50	3:20	30min					E	N								
22	"	3:30	4:05	35min					E	N								
27	"	4:15	4:45	30min					E	N								
7	"	4:50	5:20	30min					E	N								
Incidental	find	found	TURBINE 17		Bobolink	N/A		17	E 044 4512	N 476 5069	Scavenged (mowed)	N/A	N/A	14m	U	light grass	1	T170512016
		Incidental find recovered and documented after initial search							E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash Caluille N.C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: May 16th 2016 Personnel: Nash Colville

Start/End Time: 10:25am / 5:45pm

Weather Conditions: 18°C (TEMP (°C)) 27km/h SW (WIND speed/direction) Partly Cloudy (CLOUD) <1mm (PPT) <1mm (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	7854	10:35	11:05	30 mins					E	N								
7	"	11:10	11:50	40 mins					E	N								
11	"	11:55	12:25	30 mins					E	N								
12	"	12:30	1:00	30 mins					E	N								
14	"	1:05	1:35	30 mins					E	N								
17	"	1:40	2:10	30 mins					E	N								
19	7750	2:55	3:25	30 mins	(tester)			17	E 442 931	N 4764 967				11m	W	Dirt	1	
20	7854	3:00	3:30	30 mins					E	N								
22	"	3:35	4:05	30 mins					E	N								
27	"	4:15	4:55	40 mins					E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash Colville N.C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: May 19th 2016 Personnel: Nash Colville

Start/End Time: 9:45 am / 3:45 pm

Weather Conditions: 19°C (TEMP (°C)) 9km/h / NW (WIND speed/direction) Fair (CLOUD) 0 (PPT) 0 (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	7854	10:00	10:30	30 mins					E	N								
7	"	10:30	11:00	30 mins					E	N								
11	"	11:05	11:35	30 mins					E	N								
12	"	11:40	12:10	30 mins					E	N								
14	"	12:10	12:40	30 mins					E	N								
17	"	12:45	1:15	30 mins					E	N								
19	7632	1:20	1:50	30 mins					E	N								
20	7854	1:55	2:25	30 mins					E	N								
27	"	2:30	3:05	35 mins					E	N								
22	"	3:10	3:45	35 mins					E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash Colville N.C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Carrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: May 24th, 2016 Personnel: Nash Colville

Start/End Time: 10:30am / 3:45pm

Weather Conditions: 27°C (TEMP (°C)) | 8 km/h / W (WIND speed/direction) | Clear 5% (CLOUD) | 0 (PPT) | — (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	5824	10:40	11:10	30mins					E	N								
7	7854	11:15	11:45	30mins					E	N								
11	7854	11:45	12:15	30mins					E	N								
12	7350	12:15	12:45	30mins					E	N								
14	Road Blocked								E	N								
17	7125	12:50	1:20	30mins					E	N								
19	7854	1:20	1:50	30mins					E	N								
20	"	1:55	2:25	30mins					E	N								
22	"	2:25	2:55	30mins					E	N								
27	"	3:00	3:35	35mins					E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash Colville N.C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corriveau (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: May 26th 2016 Personnel: Nash Colville

Start/End Time: 10:20am / 4:30pm

Weather Conditions: 25°C (TEMP (°C)) 13km/h / SW (WIND speed/direction) Overcast (CLOUD) ~1-2mm (PPT) ~1mm (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	5253	10:30	11:00	30 mins					E	N								
7	7854	11:00	11:30	30 mins					E	N								
11	6720	11:35	12:05	30 mins					E	N								
12	7255	12:10	12:40	30 mins					E	N								
14	5000	12:45	1:15	30 mins					E	N								
19	7854	1:20	1:50	30 mins					E	N								
20	7475	1:55	2:25	30 mins					E	N								
22	7854	2:25	3:00	35 mins					E	N								
27	7854	3:05	3:40	35 mins					E	N								
17	7167	3:45	4:20	35 mins					E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash Colville N.C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: May 30th 2016 Personnel: Nash Colville

Start/End Time: 10:30 am / 4:30 pm

Weather Conditions: 26°C (TEMP (°C)) 20km/h / SW (WIND speed/direction) Clear (5%) (CLOUD) 0 (PPT) ✓ (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	5000	10:45	11:10	25mins	✓				E	N								
7	7854	11:15	11:45	30mins	✓				E	N								
11	6750	11:50	12:20	30mins	✓				E	N								
12	7000	12:20	12:50	30mins	✓				E	N								
14	5000	12:50	1:20	30mins	✓				E	N								
17	7000	1:25	1:55	30mins	(tester) bat	✓	✓	17	E 063 2382	N 475 3268	✓	✓	✓	8	NW	dirt	1	✓
19	7854	2:00	2:30	30mins	✓				E	N								
20	11	2:35	3:05	30mins	✓				E	N								
22	11	3:05	3:35	30mins	✓				E	N								
27	11	3:40	4:15	35mins	✓				E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash Colville N.C. (field notes author)

Quality Control: This form is complete ☐ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: June 2nd, 2016 Personnel: Nash Colville

Start/End Time: 10:00am / 5:00pm

Weather Conditions: 27°C (TEMP (°C)) | 18km/h / W (WIND speed/direction) | Fair (30%) (CLOUD) | 0 (PPT) | — (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	Construction	—							E	N								
7	7854	10:15	10:45	30mins					E	N								
11	6598	10:50	11:20	30mins					E	N								
14	5250	11:25	11:55	30mins					E	N								
17	7015	12:00	12:30	30mins	(tester) bat			17	E 044 4505	N 476 5068	fresh			2M	NW	dirt	2	
19	7854	2:35	1:10	35mins					E	N								
20	7381	1:15	1:45	30mins					E	N								
22	7854	2:45	3:15	30mins					E	N								
27	7854	3:20	4:00	40mins	(tester) bird			17	E 043 6007	N 476 5472	fresh			48M	E	gravel	1	
12	Construction			—					E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

Print Name & Initial: Nash Colville N.C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: June 6th, 2016 Personnel: Nash Colville

Start/End Time: 9:40am / 2:59pm

Weather Conditions: 20°C (TEMP (°C)) 21 Km/h/ W (WIND speed/direction) Overcast(50%) O (CLOUD PPT) 3-5mm (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	4000*	9:50	10:20	30mins					E	N								
7	7854	10:25	10:55	30mins					E	N								
11	4500*	11:00	11:30	30mins					E	N								
14	7854	11:35	12:05	30mins					E	N								
17	6500*	12:10	12:40	30mins					E	N								
20	4500*	12:45	1:15	30mins	(tester) bird			17	E 044 0207	N 476 5223				49	W	Gravel	1	
22	7854	1:15	1:45	30mins	(tester) blue jay			17	E 043 8328	N 476 3195				20	SE	Dirt	1	
27	7854	1:50	2:20	30mins					E	N								
19	Road Construction								E	N								
12	3000*	2:25	2:50	25mins					E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

*Class 3 grass limiting search area.

PAGE 1 OF 1

Print Name & Initial: Nash Colville N.C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Carrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: June 9th, 2016 Personnel: Nash Colville

Start/End Time: 10:30am / 4:00pm

Weather Conditions: 15°C (TEMP (°C)) | 17km/h / NW (WIND speed/direction) | Clear (10%) (CLOUD) | 0 (PPT) | 1-2mm (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	4000*	10:40	11:05	25mins					E	N								
7	7854	11:10	11:40	30mins					E	N								
11	4500*	11:45	12:15	30mins	Bat Silver Haired Bat	U	41.38mm	17	E 044 9160	N 476 3628	Moderate	48hrs	Broken Wing	10	NE	Gravel	1	T110609201
12	3000*	12:15	12:40	25mins					E	N								
17	6500*	12:45	1:15	30mins					E	N								
19	7854	1:15	1:45	30mins					E	N								
20	4500*	1:50	2:20	30mins					E	N								
22	7854	2:25	2:55	30mins					E	N								
27	7854	3:05	3:40	35mins					E	N								
14	*Access road being rebuilt*								E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash Colville N.C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: June 13th, 2016 Personnel: Nash Coluille

Start/End Time: 11:20 am / 4:35 pm

Weather Conditions: 19°C (TEMP (°C)) 15 km/h / W (WIND speed/direction) Overcast (70%) (CLOUD) 1-2 mm (PPT) <1 mm (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	4000	11:30	12:00	30 mins					E	N								
7	7854	12:05	12:35	30 mins					E	N								
11	4500	12:40	1:10	30 mins					E	N								
12	3000	1:10	1:35	25 mins					E	N								
14	7854	1:40	2:10	30 mins					E	N								
19	7854	2:15	2:45	30 mins	(tester) Bat			17	E 044 2936	N 476 4955				16	SW	dirt	1	
20	4500	2:50	3:15	25 mins					E	N								
22	7854	3:20	3:50	30 mins	(tester) Bat			17	E 043 8318	N 476 3195				14	SE	gravel	1	
27	Construction								E	N								
17	6500	3:55	4:25	30 mins					E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash Coluille N.C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: June 16/16 Personnel: Nash Colville

Start/End Time: 1000 / 1700

Weather Conditions:	TEMP (°C)	WIND speed/direction	CLOUD	PPT	PPT (last 24-hrs)
	30	?/?	?	Ø	Ø

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
									E	N								
									E	N								
									E	N								
									E	N								
									E	N								
									E	N								
									E	N								
									E	N								
									E	N								
									E	N								
									E	N								
									E	N								

No search - called out of field by Suncor - lightning warnings all day.

Search cancelled.

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: MSTRAUS on behalf of N. Colville. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: June 20th, 2016 Personnel: Nash Colville

Start/End Time: 10:40am / 4:00pm

Weather Conditions: 30°C (TEMP (°C)) 26 km/hr SW (WIND speed/direction) Overcast (40%) (CLOUD) 1-2mm (PPT) — (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	4000	10:50	11:15	25mins					E	N								
7	7854	11:20	11:50	30mins					E	N								
11	4500	11:55	12:25	30mins					E	N								
12	3000	12:25	12:50	25mins					E	N								
14	7854	12:55	1:25	30mins					E	N								
17	6500	1:30	2:00	30mins					E	N								
19	7854	2:05	2:35	30mins					E	N								
22	7854	2:40	3:10	30mins					E	N								
20	4500	3:15	3:45	30mins					E	N								
27	Construction —								E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

*Recovered 2 testers from June 13th - No searching on June 13th.

PAGE 1 OF 1

Print Name & Initial: Nash Colville N.C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: June 23rd, 2016 Personnel: Nash Colville

Start/End Time: 10:05am / 4:30pm

Weather Conditions: 22°C (TEMP (°C)) 14 Km/h / E (WIND speed/direction) Overcast (40%) (CLOUD) 0 (PPT) — (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	4000	10:15	10:45	30 mins					E	N								
7	7854	10:50	11:20	30 mins					E	N								
11	4500	11:25	11:55	30 mins					E	N								
12	3000	12:00	12:25	25 mins					E	N								
14	7854	12:30	1:00	30 mins					E	N								
17	6500	1:05	1:35	30 mins					E	N								
19	7854	1:40	2:15	35 mins					E	N								
20	6500	2:25	2:55	30 mins					E	N								
22	7854	3:00	3:35	35 mins					E	N								
27	7854	3:45	4:20	30 mins					E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash Colville N.C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: June 27th, 2016 Personnel: Nash Colville

Start/End Time: 10:40 am / 5:10 pm

Weather Conditions: 30°C (TEMP (°C)) 15 Km/h / W (WIND speed/direction) Clear (20%) (CLOUD) 0 (PPT) ~1-3mm (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	3500	10:50	11:15	25mins					E	N								
7	7854	11:20	11:50	30 mins					E	N								
11	7854	11:55	12:25	30mins					E	N								
12	4500	12:30	12:55	25mins					E	N								
14	3000	1:00	1:30	30mins	bird (tester)			17	E 044 7226	N 476 4960				25m	W	dirt	2	
17	6500	1:35	2:05	30mins					E	N								
19	7854	2:10	2:40	30mins					E	N								
20	7854	2:45	3:15	30mins					E	N								
22	7854	3:20	3:50	30mins					E	N								
27	7854	3:55	4:30	35mins					E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash Colville (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: June 29th, 2016 Personnel: Nash Colville

Start/End Time: 10:45am / 4:25pm

Weather Conditions: 22°C (TEMP (°C)) 6km/h / N (WIND speed/direction) Clear(5%) (CLOUD) 0 (PPT) ~1mm (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	3500	10:55	11:20	25 mins					E	N								
11	7854	11:25	11:55	30 mins					E	N								
12	4500	12:00	12:25	25 mins					E	N								
14	3000	12:30	1:00	30 mins					E	N								
17	6500	1:05	1:35	30 mins					E	N								
19	7854	1:40	2:10	30 mins					E	N								
20	7854	2:15	2:45	30 mins					E	N								
22	7854	2:50	3:20	30 mins					E	N								
27	7854	3:25	3:55	30 mins					E	N								
7	Maintenance								E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash Colville N.C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: July 4th 2016 Personnel: Nash Colville

Start/End Time: 11:05am / 5:05pm

Weather Conditions: 27 (TEMP (°C)) 19km/h / S (WIND speed/direction) Few Clouds (20%) (CLOUD) 0 (PPT) / (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	3500	11:05	11:35	30min					E	N								
7	7854	11:40	12:10	30min					E	N								
11	7854	12:15	12:45	30min					E	N								
12	4500	12:50	1:20	30min					E	N								
14	3000	1:25	1:55	30min					E	N								
17	6500	2:00	2:30	30min					E	N								
19	7854	2:35	3:05	30min					E	N								
20	7854	3:10	3:40	30min	European Starling	F		17	E 0447203	N 4764935	Early	<24hr	broken neck	<1	N	gravel	1	T200704 2016A
22	7854	3:45	4:15	30min					E	N								
27	7854	4:20	4:50	30min					E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: July 7th 2016 Personnel: Nash Colville

Start/End Time: 10:20am / 4:00pm

Weather Conditions: 26°C (TEMP (°C)) 5km/h / SW (WIND speed/direction) Fair (30%) (CLOUD) 0 (PPT) ~1-3mm (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	3500	10:30	11:00	30mins					E	N								
11	6500	11:05	11:35	30mins					E	N								
12	4500	11:40	12:10	30mins					E	N								
14	4000	12:15	12:45	30mins					E	N								
17	6500	12:50	1:20	30mins					E	N								
19	6500	1:25	1:55	30mins					E	N								
20	7854	2:00	2:30	30mins					E	N								
22	7854	2:35	3:05	30mins					E	N								
27	7854	3:10	3:45	35mins					E	N								
7	Maintenance								E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash Colville N.C. (field notes author)

Quality Control: This form is complete ☐ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: July 11th, 2016 Personnel: Nash Colwill

Start/End Time: 10:50am / 3:50pm

Weather Conditions: 26°C (TEMP (°C)) 16 Km/h / N (WIND speed/direction) Overcast (70%) 0 (CLOUD PPT) — (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	3500	11:00	11:30	30 mins					E	N								
7	7854	11:35	12:05	30 mins	Bat (tester)			17	E 0449681	N 4762588				2	N	grass	2	
11	7854	12:10	12:40	30 mins	Bird (tester)			17	E 0449165	N 4763613				38	SE	gravel	1	
12	4500	12:45	1:15	30 mins					E	N								
14	4000	1:20	1:50	30 mins	Bat (tester)			17	E 0447167	N 4764830				24	SW	gravel	1	
17	6500	1:55	2:20	25 mins					E	N								
19	6500	2:25	2:55	30 mins					E	N								
20	Road Blocked / Road Construction								E	N								
22	Turbine Maintenance								E	N								
27	7854	3:10	3:40	30 mins					E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: July 14th, 2016 Personnel: Nash Colville

Start/End Time: 10:50am / 1:30pm

Weather Conditions: 24°C (TEMP (°C)) 16 km/h / W (WIND speed/direction) Partly Cloudy (30%) (CLOUD) 0 (PPT) — (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	3500	11:00	11:30	30min					E	N								
7	7854	11:35	12:05	30min					E	N								
11	7854	12:10	12:40	30min					E	N								
12	4500	12:45	1:15	30min					E	N								
									E	N								
*Field Staff went home sick - and did not survey remaining turbines									E	N			*					
									E	N								
									E	N								
									E	N								
									E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: July 18th, 2016 Personnel: Nash Colville

Start/End Time: 10:35am / 4:15pm

Weather Conditions: 26°C (TEMP (°C)) 18Km/h / NW (WIND speed/direction) Partly Cloudy (30%) (CLOUD) 0 (PPT) — (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	5000*	10:45	11:15	30 mins					E	N								
7	Maintenance								E	N								
11	7500*	11:20	11:50	30 mins					E	N								
12	7000*	11:55	12:25	30 mins					E	N								
14	4000	12:30	1:00	30 mins					E	N								
17	7500*	1:05	1:35	30 mins					E	N								
19	6500	1:40	2:10	30 mins					E	N								
20	7854	2:15	2:45	30 mins					E	N								
22	7854	2:50	3:20	30 mins					E	N								
27	7854	3:25	4:00	35 mins					E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

* Recently cut by farmers creating swaths of class 2/3

PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: July 21st 2016 Personnel: Nash Colville

Start/End Time: 10:40 am / 4:45 pm

Weather Conditions: 30 (TEMP (°C)) 11 km/h / N (WIND speed/direction) fair (15%) (CLOUD) 0 (PPT) — (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	5000	10:50	11:20	30 mins	Bat (tester)			17	E 063 1851	N 475 0720				2	E	dirt	1	
7	7854	11:25	11:55	30 mins					E	N								
11	7500	12:00	12:30	30 mins					E	N								
12	7000	12:35	1:05	30 mins	Bat (tester)			17	E 044 7852	N 476 3379				23	NW	gravel	1	
14	4000	1:10	1:40	30 mins					E	N								
17	7500	1:45	2:15	30 mins					E	N								
19	6500	2:20	2:45	25 mins	Bat (tester)			17	E 044 2993	N 476 4988				39	NE	dirt	1	
20	7854	2:50	3:20	30 mins					E	N								
22	7854	3:25	4:05	30 mins					E	N								
27	7854	4:10	4:40	30 mins					E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: July 26th, 2016 Personnel: Nash Colvill

Start/End Time: 11:25am / 3:55pm

Weather Conditions: 27 (TEMP (°C)) 18km/h / NW (WIND speed/direction) Partly Cloud (25%) 0 (CLOUD / PPT) — (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	5000	11:35	12:00	25mins					E	N								
7	7854	12:05	12:30	25mins					E	N								
11	7000	12:35	1:05	30mins					E	N								
12	7000	1:05	1:35	30mins					E	N								
14	4000	1:40	2:05	25mins					E	N								
17	7000	2:10	2:35	25mins					E	N								
19	Maintenance								E	N								
20	7854	2:40	3:10	30min	Hoary Bat	F	47mm	17	E 0444 0242	N 476 5057	Early	24hrs	Broken Wing	2	NE	gravel	1	T2007262
22	7854	3:15	3:45	30mins					E	N								
27	Road Blocked/ Construction								E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: July 29th, 2016 Personnel: Nash Colwill

Start/End Time: 8:45am / 2:55pm

Weather Conditions: 28 (TEMP (°C)) 16 km/h / SE (WIND speed/direction) Overcast (65%) (CLOUD) 0. (PPT) — (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	5000	8:55	9:20	25min	—				E	N								
7	7854	9:25	9:55	30mins	Bird (tester)	—	—	17	E 044 9649	N 476 2127	—	—	—	21	SW	Crops	2	
11	7000	10:00	10:30	30mins	Big Brown Bat	M	41.5mm	17	E 044 9180	N 476 3608	Fresh	<24hr	N/A	32	SE	gravel	1	TT10729201
12	7000	10:35	11:05	30mins	—				E	N								
14	4000	11:10	11:40	30mins	Bird (tester)	—	—	17	E 044 7151	N 476 4844	—	—	—	20	W	dirt	1	
17	6000	11:45	12:15	30mins	Bat (tester)	—	—	17	E 044 4508	N 476 5053	—	—	—	15	S	Crops	2	
19	6000	12:25	12:55	30mins	—				E	N								
20	7854	1:00	1:30	30mins	—				E	N								
22	7854	1:35	2:05	30mins	—				E	N								
27	7854	2:10	2:40	30mins	—				E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan. (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: August 2nd 2016 Personnel: Nash Colville

Start/End Time: 10:58 am / 4:55 pm

Weather Conditions: 30°C (TEMP (°C)) 27 km/hr S (WIND speed/direction) Fair (15%) (CLOUD) 0 (PPT) ~3-5mm (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	6000	11:00	11:25	25 mins					E	N								
7	6500	11:30	12:00	30 mins					E	N								
11	7854	12:05	12:35	30 mins					E	N								
12	7000	12:40	1:10	30 mins					E	N								
14	3000	1:15	1:45	30 mins	Hoary Bat	U	52mm	17	E 044 7162	N 476 4872	Moderate	48hrs	Decapitated	8m	W	Crops	2	T14080720
17	Maintenance								E	N								
19	5000	1:50	2:20	30 mins					E	N								
20	5500	3:00	3:30	30 mins					E	N								
22	6500	3:35	4:05	30 mins					E	N								
27	Maintenance								E	N								
18	7854	2:25	2:55	30 mins					E	N								
26	7854	4:10	4:40	30 mins					E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: August 4th, 2016 Personnel: Nash Colville

Start/End Time: 9:50 am / 2:50 pm

Weather Conditions: 31°C (TEMP (°C)) | 19km/h / S (WIND speed/direction) | few Clouds (15%) (CLOUD) | 0 (PPT) | — (PPT (last 24-hrs))

DECOMPOSITION CODES²:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS⁴
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm¹ (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code²	Est. Hours Since Death	Injury³ Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class⁴	Photo #
6	6250	10:00	10:25	25mins					E	N								
7	6500	10:35	11:00	25mins					E	N								
11	7854	11:05	11:35	30mins					E	N								
12	7000	11:40	12:10	30mins					E	N								
14	3000	12:15	12:45	30mins					E	N								
17	6500	12:50	1:15	25mins					E	N								
19	Maintenance			—					E	N								
20	Maintenance			—					E	N								
22	6000	1:20	1:50	30mins					E	N								
27	6000	1:55	2:25	30mins					E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: August 8th, 2016 Personnel: Nash Colville

Start/End Time: 11:40 am / 5:50 pm

Weather Conditions: 29°C (TEMP (°C)) 14 km/h / S (WIND speed/direction) Partly Cloudy (30%) (CLOUD) 0 (PPT) — (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	6250	11:50	12:20	30 mins					E	N								
7	6500	12:25	12:55	30 mins					E	N								
11	7854	1:00	1:30	30 mins					E	N								
12	7000	1:35	2:05	30 mins					E	N								
14	3000	2:10	2:40	30 mins					E	N								
17	6000	2:45	3:15	30 mins					E	N								
19	Maintenance								E	N								
20	5000	3:25	3:55	30 mins	(tester) Bird			17	E	N				20	W	Crops	2	✓
22	5500	4:00	4:35	35 mins					E	N								
27	6000	4:40	5:15	35 mins	(tester) Bat			17	E	N				45	E	dirt/grass	1	✓
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: Aug 11th 2016 Personnel: Nash Colville

Start/End Time: / / /

Weather Conditions: 24°C (TEMP °C) 23km/h SE (WIND speed/direction) (80%) Thunderstorms (CLOUD) 3-5mm (PPT) <1mm (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6*	/								E	N								
	*Thunderstorms all day, called off by Site staff								E	N								
									E	N								
									E	N								
									E	N								
									E	N								
									E	N								
									E	N								
									E	N								
									E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: August 15th 2016 Personnel: Nash Colvill

Start/End Time: 10:00am / 4:00pm

Weather Conditions: 28°C (TEMP (°C)) 22km/h/ SE (WIND speed/direction) Heavy Rain (70%) 1-2mm (CLOUD / PPT) <1mm (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	5500	10:10	10:35	25min					E	N								
7	6000	10:40	11:05	25min					E	N								
11	7000	11:10	11:40	30min					E	N								
12	6750	11:45	12:15	30min					E	N								
14	3000	12:20	12:45	25min					E	N								
17	5500	12:50	1:20	30min					E	N								
19	4250	1:25	1:50	25min					E	N								
20	5000	1:55	2:25	30min					E	N								
22	4500	2:30	3:00	30min					E	N								
27	4750	3:05	3:30	25min					E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: August 18th 2016 Personnel: Nash Colville

Start/End Time: 10:30am / 4:00pm

Weather Conditions: 28°C (TEMP (°C)) 7 km/hr N (WIND speed/direction) Fair (10%) (CLOUD) 0 (PPT) — (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	6000	10:40	11:05	25min					E	N								
7	6000	11:10	11:35	25min					E	N								
11	7000	11:40	12:10	30min					E	N								
12	Maintenance								E	N								
14	3250	12:15	12:45	30min					E	N								
17	5250	12:50	1:15	25min					E	N								
19	4000	1:20	1:45	25min					E	N								
20	5500	1:50	2:20	30min	(tester) Bird			17	E 044 0272	N 476 5232				8	SW	grass	1	
22	4500	2:25	2:50	25min					E	N								
27	5000	2:55	3:25	30min	(tester) Bat			17	E 043 5982	N 476 5480				21	NE	dirt	1	
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Carigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: August 22nd 2016 Personnel: Nash Colville

Start/End Time: 9:35am / 2:15pm

Weather Conditions: 26°C (TEMP (°C)) 14km/h / NE (WIND speed/direction) Partly Cloudy (30%) (CLOUD) — (PPT) n/1-2mm (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	6000	9:45	10:10	25min					E	N								
7	6000	10:15	10:40	25min					E	N								
11	7000	10:45	11:15	30min					E	N								
12	Maintenance								E	N								
14	3250	11:20	11:50	30min					E	N								
17	Construction								E	N								
19	3750	11:55	12:20	25min					E	N								
20	6000	12:25	12:55	30min					E	N								
22	4500	1:00	1:25	25min					E	N								
27	5000	1:30	2:00	30min					E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: August 26th 2016 Personnel: Nash Colville

Start/End Time: 11:40 am / 4:00 pm

Weather Conditions: 27°C (TEMP (°C)) 20 km/hr S (WIND speed/direction) Fair (20%) (CLOUD) <1 mm (PPT) 1-3 mm (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	6250	11:50	12:15	25 min					E	N								
7	6000	12:20	12:45	25 min					E	N								
11		Maintenance							E	N								
12	6750	12:50	1:20	30 min					E	N								
14	3250	1:25	1:50	25 min					E	N								
17		Construction							E	N								
19	3750	1:55	2:20	25 min					E	N								
20	6500	2:25	2:55	30 min					E	N								
22	4500	3:00	3:25	25 min	Red Bat	f	43 mm	17	E 438 322	N 4763 208	Fresh	<24 hrs	broken neck	16	E	gravel	1	T2208261A
27	5000	3:30	3:55	25 min					E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: August 29th 2016 Personnel: Nash Colville

Start/End Time: 11:05 am / 4:35 pm

Weather Conditions: 28°C (TEMP (°C)) 12 km/h / N (WIND speed/direction) Fair (20%) (CLOUD) 0 (PPT) — (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	6500	11:15	11:40	25min	(tester) Bat			17	E 045 1976	N 476 2594				16	SW	grass	2	
7	6000	11:45	12:10	25min	(tester) Raptor			17	E 044 9630	N 476 2142				29	N	gravel	1	
11	7000	12:20	12:45	25min	(tester) Bat			17	E 044 9630	N 476 2142				46	NW	gravel	1	
12	6750	12:50	1:15	25min					E	N								
14	3250	1:20	1:50	30min					E	N								
17	5000	1:55	2:20	25min					E	N								
19	3500	2:25	2:50	25min					E	N								
20	7000	2:55	3:20	25min					E	N								
22	4500	3:25	3:50	25min					E	N								
27	5000	3:55	4:25	30min					E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: Thursday Sept 1st, 2016 Personnel: Dean DiMarco

Start/End Time: 11:30am 4:50pm

Weather Conditions: 22 (TEMP (°C)) | 18km/NW (WIND speed/direction) | 12 (CLOUD) | 0 (PPT) | 0 (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	5500	11:30	12:00	30min					E	N								
11	– Maintenance								E	N								
12	6500	12:15	12:45	11					E	N								
14	1600	12:50	1:20	11					E	N								
17	– Construction								E	N								
19	1750	1:25	1:55	11					E	N								
20	7850	2:00	2:30	11					E	N								
22	2175	3:06	3:30	11					E	N								
27	1300	3:35	4:06	11					E	N								
7	1050	4:05	4:35	11					E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

Print Name & Initial: Dean DiMarco DD (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Gingrich (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: ~~160961067~~ Project Name: Adelaide Wind Farm

Date: Tuesday Sept 6th/2016 Personnel: Don Ellis

Start/End Time: 12:00pm / 5:45pm

Weather Conditions:	29	10km, SW	C	0	0
	TEMP (°C)	WIND speed/direction	CLOUD	PPT	PPT (last 24-hrs)

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
7	1125	12:00	12:30	30min	/				E	N								
6	5875	12:35	1:05	11	/				E	N								
11	7475	1:10	1:40	11	/				E	N								
12	7100	1:45	2:15	11	/				E	N								
14	13752	2:20	2:50	11	/				E	N								
17	3150	2:55	3:25	11	/				E	N								
19	1550	3:30	4:00	11	/				E	N								
20	7750	4:05	4:35	11	/				E	N								
22	1675	4:40	5:10	11	/				E	N								
27	1175	5:15	5:45	11	/				E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Don D'Eon DE (field notes author)

Quality Control: This form is complete ☐ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: Thursday Sept 8th, 2016 Personnel: Dan Dilario

Start/End Time: 11:00am / 4:45pm

Weather Conditions:	TEMP (°C)	WIND speed/direction	CLOUD	PPT	PPT (last 24-hrs)
	26	18km / SW	18	0	0

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
7	1125	11:05	11:35	30min	✓				E	N								
12	6250	11:40	12:10	11	✓				E	N								
14	825	12:15	12:45	11	✓				E	N								
20	7650	12:50	1:20	11	✓				E	N								
27	1550	1:25	1:55	11	✓				E	N								
22	900	2:00	2:30	11	✓				E	N								
17	3575	2:35	3:05	11	✓				E	N								
19	1550	3:10	3:40	11	✓				E	N								
11	7450	3:45	4:15	11	✓				E	N								
6	~~7875~~ → 5625	4:20	4:50	11	✓				E	N								
				NF	✓				E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 2 OF 2

Print Name & Initial: DD (field notes author)

Quality Control: This form is complete ☐ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: Monday Sept 12/2016 Personnel: Don Dillane

Start/End Time: 12:30pm / 5:40pm

Weather Conditions:	TEMP (°C)	WIND speed/direction	CLOUD	PPT	PPT (last 24-hrs)
	22	11 Km / S	6	0	0

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
7	1075	12:30	1:00	30min					E	N								
6	Maintenance								E	N								
11	1725	1:05	1:35	11					E	N								
12	1850	1:40	2:10	11	Bat Tester	/	/	17	E 447 866	N 4763 368	TEST	CARCASS		15	NW	gravel	1	/
14	975	2:15	2:45	11					E	N								
17	3275	2:50	3:20	11					E	N								
19	1550	3:25	3:55	11					E	N								
20	1675	4:00	4:30	11					E	N								
22	950	4:35	5:05	11					E	N								
27	1500	5:10	5:40	11					E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 11 OF ___

Print Name & Initial: Don Dillane DD (field notes author)

Quality Control: This form is complete ☐ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: Thursday Oct 15/2016 Personnel: Dan Dilario

Start/End Time: 12:45pm 6:30pm

Weather Conditions: 22 (TEMP (°C)) | 8km, NE (WIND speed/direction) | 11 (CLOUD) | 0 (PPT) | 6 (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
7	1400	12:45	1:15	30min					E	N								
6	5500	1:28	1:56	11	Bat Tester	n/a	n/a	17	E 451 993	N 4762 598	TESTER CARCASS			20	SE	grass	2	/
11	6900	1:55	2:25	11	Bird Tester	n/a	n/a	17	E 444 152	N 4763 625	TESTER CARCASS			1	N	gravel	1	/
12	7650	2:36	3:06	11	/				E	N								
14	900	3:05	3:35	11	/				E	N								
17	3100	3:40	4:10	11	/				E	N								
19	1400	4:15	4:45	11	Raptor Tester	n/a	n/a	17	E 442 976	N 4764 972	TESTER CARCASS			31	NE	weeds	2	/
20	7685	4:50	5:20	11	/				E	N								
22	1025	5:25	5:55	11	/				E	N								
27	1750	6:06	6:30	11	/				E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Dan Dilario DD (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: Tuesday Sept 20/2016 Personnel: Dan Dlw

Start/End Time: 1:10 pm / 5:45 pm

Weather Conditions: 26 (TEMP (°C)) 10km / NW (WIND speed/direction) 9 (CLOUD) 0 (PPT) 0 (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
7	1400	1:10	1:40	30min	—				E	N								
6	1100	1:45	2:15	11	—				E	N								
11	7500	2:20	2:50	11	—				E	N								
12	— Maintenance —								E	N								
14	1125	3:00	3:30	11	—				E	N								
17	3100	3:35	4:05	11	—				E	N								
19	1400	4:10	4:40	11	—				E	N								
20	7650	4:45	5:15	11	Turkey Vulture (top)	/	/	17T	E 0440222	N 4765231	Moderate	72hr	cut in half	32m	W	Class	2	1
22	1175	5:20	5:50	11	—				E	N								
27	1675	5:55	6:25	11	—				E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1 Dan Dlw DD

Print Name & Initial: _____ (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: Thursday Sept 22/2016 Personnel: Dan DiLorio

Start/End Time: 11:45am / 5:30pm

Weather Conditions:	26	11Km/ S	0	0	0
	TEMP (°C)	WIND speed/direction	CLOUD	PPT	PPT (last 24-hrs)

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
7	1650	11:45	12:15	30min	/				E	N								
6	1050	12:20	12:50	11	/				E	N								
11	7125	12:50	1:25	11	/				E	N								
12	5500	1:30	2:00	11	/				E	N								
14	1250	2:05	2:35	11	/				E	N								
17	3300	2:40	3:10	11	/				E	N								
19	1550	3:15	3:45	11	/				E	N								
20	5850	3:50	4:20	11	Bird Tester	n/a	n/a	17	E 440 242	N 4765 220	TESTER CARCASS 14				SW	gravel	1	/
22	900	4:25	4:55	11	/				E	N								
27	1350	5:00	5:30	11	/				E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

Print Name & Initial: Dan DiLorio (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: Monday Sept 26/2016 Personnel: Don DiLorio

Start/End Time: 12:30 am / 6:15 pm

Weather Conditions: 17 (TEMP (°C)) | 11km, SW (WIND speed/direction) | 72 (CLOUD) | 2cm (PPT) | 2cm (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
7	1250	12:35	1:05	30min	/				E	N								
6	1125	1:10	1:40	11	/				E	N								
11	7100	1:45	2:15	30min	Raptor Wing → Red-tailed Hawk	/	/	17T	E 0449192	N 4763628	Advanced	72hr+	/	42m	E	Dirt	1	/
12	5300	2:20	2:50	11	/				E	N								
14	1300	2:55	3:25	11	/				E	N								
17	3500	3:30	4:00	11	/				E	N								
19	1150	4:05	4:35	11	/				E	N								
20	6800	4:46	5:16	11	/				E	N								
22	1100	5:15	5:45	11	/				E	N								
27	2750	5:50	6:20	11	/				E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 12 OF ___

Print Name & Initial: Don DiLorio DD (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: Thursday Sept 29/16 Personnel: Dan Dillon

Start/End Time: 9:50am / 3:35pm

Weather Conditions: 16 (TEMP °C) 26km, NE (WIND speed/direction) 14 (CLOUD) 0 (PPT) 0 (PPT (last 24-hrs))

DECOMPOSITION CODES²:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS⁴
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm¹ (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code²	Est. Hours Since Death	Injury³ Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class⁴	Photo #
7	1430	9:50	10:20	30min	—				E	N								
6	975	10:25	10:55	11	—				E	N								
11	7625	11:00	11:30	11	—				E	N								
12	~~7700~~	11:35	12:05	30min	Eastern 1st	M	41mm	17T	E 0447855	N 4763381	Early	48hr	/	21m	N	Dirt	1	/
14	1450	12:10	12:40	11	—				E	N								
17	3275	12:45	1:15	11	—				E	N								
19	1180	1:20	1:50	11	—				E	N								
20	7200	1:55	225	11	—				E	N								
22	1850	2:30	3:00	30min	Turkey Vulture	/	/	17T	E 0438316	N 4763185	advanced	5day+	/	25m	S	Soy Bean	2	/
21	1650	3:05	3:35	11	—				E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 12 OF ___

Print Name & Initial: Dan Dillon PD (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: Monday October 3, 2016 Personnel: Dan DiLeo

Start/End Time: 12:00 pm / 5:15 pm

Weather Conditions:	TEMP (°C)	WIND speed/direction	CLOUD	PPT	PPT (last 24-hrs)
	20	10km/ NW	22	0.2	0.2

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
6	940	12:00	12:30	30min	/				E	N								
7	235	12:35	1:05	11	/				E	N								
11	7325	1:10	1:40	11	Silver haired Bat	M	42mm	17T	E 0449163	N 4763617	Fresh	24hr	N/A	25m	SE	Gravel	1	/
20	7800	1:45	2:15	11	Turkey (Top) Vulture	\	\	17T	E 0440203	N ~~4763617~~	delayed	2week	Cut in half	61m	SW	Grass	2	/
07	3350	2:20	2:50	11	Incidental				E	N 4765 17B								
22	1700	2:55	3:25	11	/				E	N								
19	1475	3:30	4:00	11	/				E	N								
17	2875	4:05	4:35	11	/				E	N								
14	950	4:40	5:10	11	/				E	N								
12	—	Farmer	Sprays	Fertilizer					E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Dan DiLeo DD (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: 7th October 6th/2016 Personnel: Dom D'Iario

Start/End Time: 10:45am / 4:30pm

Weather Conditions:	22	10km / S	17	0	0
	TEMP (°C)	WIND speed/direction	CLOUD	PPT	PPT (last 24-hrs)

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
7	2100	10:45	11:15	30min					E	N								
6	825	11:20	11:50	11					E	N								
11	6925	11:55	12:25	30min	Silverhair Bat	M	36mm	17T	E 0449145	N 4763613	Fresh	24hr	/	6m	SW	Stone	1	/
12	7375	12:30	1:00	11					E	N								
14	1075	1:05	1:35	11					E	N								
17	4400	1:40	2:10	11					E	N								
19	1125	2:15	2:45	11					E	N								
20	7650	2:50	3:20	30min	Silverhair Bat	F	39mm	17T	E 0440257	N 4763228	Fresh	24hr	/	1m	S	Pavement	1	/
22	1875	3:25	3:55	11					E	N								
27	3800	4:00	4:30	11					E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Dom D'Iario PD (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: Friday Oct 7th 11/2016 Personnel: Dan Dilanio

Start/End Time: 11:20 am / 5:16 pm

Weather Conditions:	TEMP (°C)	WIND speed/direction	CLOUD	PPT	PPT (last 24-hrs)
	17	14km, S	0	0	0

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
7	2275	11:20	11:50	30min					E	N								
6	1075	11:55	12:25	11					E	N								
11	7500	12:30	1:00	11					E	N								
27	4125	1:10	1:40	11					E	N								
22	5050	1:45	2:15	11					E	N								
26	6980	2:20	2:56	11					E	N								
12	7100	2:55	3:25	11					E	N								
14	1125	3:30	4:00	11					E	N								
17	3500	4:05	4:35	11					E	N								
19	1575	4:40	5:16	11					E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 12 OF ___

Print Name & Initial: Dan Dilanio DD (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: Thursday October 13/2016 Personnel: Dan Dilario

Start/End Time: 11:15 am / 5:00 pm

Weather Conditions: 11 (TEMP (°C)) 19km, NW (WIND speed/direction) 32 (CLOUD) 0 (PPT) 0 (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
7	3850	11:15	11:45	30 min	—				E	N								
6	1100	11:50	12:20	11	Bird Tester	n/a	n/a	17	E 451 99	N 4762 542	TEST CARCASS			18	SE	gravel	1	✓
11	8165	12:25	12:55	11	—				E	N								
20	7075	1:00	1:30	11	—				E	N								
22	8300	1:35	2:05	11	—				E	N								
27	5840	2:10	2:40	11	—				E	N								
12	7300	2:45	3:15	11	—				E	N								
14	1180	3:20	3:50	11	—				E	N								
17	3750	3:55	4:25	11	—				E	N								
19	1740	4:30	5:00	11	—				E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Dan Dilario (field notes author)

Quality Control: This form is complete ☐ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: Monday October 17/16 Personnel: Dan D'Hont

Start/End Time: 1230pm / 840am

Weather Conditions:	TEMP (°C)	WIND speed/direction	CLOUD	PPT	PPT (last 24-hrs)
	22	19km/ SW	32	0	6

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
20	7800	1:30	1:60	30min	—				E	N								
22	7925	1:65	1:35	11	—				E	N								
27	7300	1:40	2:16	11	—				E	N								
19	1740	2:15	2:45	11	—				E	N								
17	3300	2:50	3:20	11	—				E	N								
14	4175	3:25	3:55	11	— Bird tester female T-14				E	N								
12	6875	4:00	4:30	11	—				E	N								
11	7680	4:35	5:05	11	—				E	N								
7	4950	5:10	5:40	11	—				E	N								
6	1325	5:45	6:15	11	Bird Tester	n/a	n/a	17	E 447166	N 4764852	TESTER CARCASS	2	W	gravel	1	1		
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Dan D'Hont DD (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: October 20/2016 Personnel: Don Dea

Start/End Time: 11:15 am / [illegible] 5:00 pm

Weather Conditions:	TEMP (°C)	WIND speed/direction	CLOUD	PPT	PPT (last 24-hrs)
	13	6km / NE	G2	0.8cm	0.8cm

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
27	7650	11:15	11:45	30 min	/				E	N								
22	7950	11:50	12:20	11	Bat Death	n/a	n/a	17	E 438 325	N 4763 147	TESTER CARCASS			20	SE	Dirt	1	/
20	7775	12:25	12:55	11	/				E	N								
19	1825	1:00	1:30	11	Bat tester	n/a	n/a	17	E 442 951	N 4764 968	TESTER CARCASS			0	N	Cement	1	/
17	3306	1:35	2:05	11	/				E	N								
14	4475	2:10	2:40	11	/				E	N								
12	6925	2:45	3:15	11	/				E	N								
11	7900	3:20	3:50	11	/				E	N								
7	5200	~~3:55~~	4:25	11	/				E	N								
6	1375	4:30	5:00	11	/				E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Don Dea DD (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: Monday October 24/2016 Personnel: Don D'Ilario

Start/End Time: 10:15am / 4:06pm

Weather Conditions:	TEMP (°C)	WIND speed/direction	CLOUD	PPT	PPT (last 24-hrs)
	0	23km/ NW	4/	0.3cm	0.3cm

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
27	7550	10:15	10:45	30min	/				E	N								
22	7925	10:30	11:20	11	/				E	N								
26	7656	11:25	11:55	11	/				E	N								
19	1725	12:00	12:30	11	/				E	N								
17	3756	12:35	1:05	11	/				E	N								
14	3865	1:16	1:46	11	/				E	N								
12	7100	1:45	2:15	11	/				E	N								
11	7735	2:20	2:50	11	/				E	N								
7	5160	2:55	3:25	11	/				E	N								
6	1846	3:30	4:00	11	/				E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Don D'Ilario DD (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: Thursday October 27th 2016 Personnel: Dan Dh

Start/End Time: 11am / 4:10pm

Weather Conditions: 4 (TEMP (°C)) | 10km, NE (WIND speed/direction) | 70 (CLOUD) | 1.2cm (PPT) | 1.2cm (PPT last 24-hrs)

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
7	6200	11:00	11:30	30min	/				E	N								
6	2175	11:35	12:05	11	/				E	N								
11	7358	12:10	12:40	11	/				E	N								
12	7675	12:45	1:15	11	/				E	N								
14	3800	1:20	1:50	11	/				E	N								
17	4180	1:55	2:25	11	/				E	N								
19	1965	2:30	3:00	11	/				E	N								
20	—	Maintenance			—				E	N								
22	8015	3:05	3:35	30min	Bat Hoary	/	46mm	17J	E 0438323	N 4763205	Advanced	72hr+	/	15m	W	Stones	1	/
27	7825	3:40	4:16	11	/				E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Dan Dh DD (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Raptor Blitz

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: May 18th, 2016 Personnel: Nash Colville

Start/End Time: 9:45am / 1:40pm

Weather Conditions: 20°C (TEMP (°C)) 13km/h / W (WIND speed/direction) Fair (15%) (CLOUD) 0 (PPT) — (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
5	7854	9:55	10:10	15mins					E	N								
8	6500	10:15	10:30	15mins					E	N								
9	7854	10:35	10:50	15mins					E	N								
13	7854	11:00	11:20	20mins					E	N								
15	3000	11:25	11:40	15mins					E	N								
18	7854	11:55	12:10	15mins					E	N								
21	7854	12:25	12:40	15mins					E	N								
26	7854	12:50	1:05	15mins					E	N								
									E	N								
									E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash C (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Raptor Blitz

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: June 22nd, 2016 Personnel: Nash Colville

Start/End Time: 10:50am / 1:30pm

Weather Conditions: 24°C (TEMP (°C)) 19km/h / N (WIND speed/direction) Clear(5%) (CLOUD) — (PPT) — (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
5	7854	11:00	11:15	15 mins					E	N								
8	6500	11:20	11:40	20 mins					E	N								
9	7854	11:45	12:00	15 mins					E	N								
13	7854	12:05	12:25	20 mins					E	N								
18	7854	12:30	12:50	20 mins					E	N								
21	7854	1:00	1:20	20 mins					E	N								
26	TURBINE CONSTRUCTION								E	N								
15	maintenance								E	N								
									E	N								
									E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Raptor Blitz

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: July 19th Personnel: Nash Colville

Start/End Time: 11:10am / 2:00pm

Weather Conditions: 26 (TEMP (°C)) 23km/h / NW (WIND speed/direction) Fair (15%) (CLOUD) 0 (PPT) ✓ (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
5	7854	11:20	11:35	15min	✓				E	N								
8	4000	11:40	11:50	10min	✓				E	N								
9	7854	11:55	12:05	10 min	✓				E	N								
13	7854	12:10	12:25	15min	✓				E	N								
15	3000	12:30	12:45	15min	✓				E	N								
18	7854	12:50	1:05	15min	✓				E	N								
21	7854	1:10	1:25	15min	✓				E	N								
26	7854	1:30	1:45	15min	✓				E	N								
									E	N								
									E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☐ & legible ☐

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: August 24th 2016 Personnel: Nash Colville

Start/End Time: 10:40 am / 4:05 pm

Weather Conditions: 27°C (TEMP (°C)) 26 km/h / NW (WIND speed/direction) Fair(15%) (CLOUD) 0 (PPT) — (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
5	7854	10:50	11:20	30min					E	N								
8	"	11:25	11:55	30min					E	N								
9	"	12:00	12:30	30min					E	N								
13	"	12:35	1:05	30min					E	N								
15	"	1:10	1:40	30min					E	N								
18	"	1:45	2:15	30min					E	N								
21	"	2:20	2:50	30min					E	N								
26	"	2:55	3:25	30min					E	N								
									E	N								
									E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

SAR Trial

Project No: 160961067 Project Name: Adelaide Wind Farm SAR

Date: Wednesday Sept 28/2016 Personnel: Dan DiMario

Start/End Time: 11:00am / 6:20pm

Weather Conditions:	TEMP (°C)	WIND speed/direction	CLOUD	PPT	PPT (last 24-hrs)
	22	18km/ E	40	0.8cm	0.9cm

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
5	7906	11:00	11:45	45min	/				E	N								
8	7980	11:50	12:45	55min	/				E	N								
9	8175	12:50	1:30	40min	/				E	N								
13	8050	1:35	2:20	45min	/				E	N								
	//	Lightning			Warning	/			E	N								
15	7875	3:40	4:15	35min	/				E	N								
18	7975	4:20	5:00	40min	—				E	N								
21	8030	5:05	5:35	30min	Silverhair	/	42mm	17T	E 0631915	N 4750609	Complete	Week+	/	41m	E	Grass	2	/
26	8240	5:40	6:20	40min	/				E	N								
									E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

Print Name & Initial: Dan DiMario (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

SAR Trial

Project No: 160961067 Project Name: Adelaide Wind Farm SAR

Date: Wed October 26th 2016 Personnel: Don D

Start/End Time: 12:30 pm / 5:45pm

Weather Conditions:	5	14km/ E	90	2.1cm	2.1cm
	TEMP (°C)	WIND speed/direction	CLOUD	PPT	PPT (last 24-hrs)

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
5	7900	12:30	1:10	40min					E	N								
8	7980	1:15	145	30min					E	N								
9	8175	1:50	2:20	30min					E	N								
13	8050	2:25	3:00	35min					E	N								
15	8020	3:05	3:35	30min					E	N								
18	7875	3:40	4:20	40min					E	N								
21	7960	4:25	5:00	35min					E	N								
26	8215	5:05	5:45	40min					E	N								
									E	N								
									E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

Print Name & Initial: Don D (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Comyan (field notes QA/QC personnel)

Mortality Survey
Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: Tuesday, Nov 1/2016 Personnel: Dan DH

Start/End Time: 10:00 am / 2:30pm

Weather Conditions:	16°	23km S	22	0	0
	TEMP (°C)	WIND speed/direction	CLOUD	PPT	PPT (last 24-hrs)

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration (min)	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
27	7935	10:00	10:20	20min					E	N								
22	8215	10:25	10:55	30					E	N								
20	8060	11:00	11:15	15					E	N								
19	7750	11:20	11:45	25					E	N								
17	7240	11:50	12:16	30					E	N								
14	7680	12:15	12:45	30					E	N								
12	8140	12:50	1:10	20					E	N								
11	7920	1:15	1:35	20					E	N								
6	8275	1:40	2:00	20					E	N								
7	7525	2:05	2:30	25					E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: DD Dan D'Ilario (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Mortality Survey
Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm
Date: Nov 8/2016 Personnel: Dan DiMario
Start/End Time: 9:30am / 2:10pm

Weather Conditions: 14 TEMP (°C) | 16km/ SW WIND speed/direction | 60 CLOUD | 0.1cm PPT | 0.1cm PPT (last 24-hrs)

DECOMPOSITION CODES[2]: Fresh | Moderate | Complete | Early | Advanced | Scavenged

	% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
	≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
	≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
	≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
	Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration (min)	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting E	Northing N	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
7	7840	9:30	9:50	20					E	N								
6	8165	9:55	10:20	25					E	N								
11	7535	10:25	10:50	25					E	N								
12	7915	10:55	11:20	25					E	N								
14	8305	11:25	11:55	30					E	N								
17	8085	12:00	12:20	20					E	N								
19	8140	12:25	12:50	25					E	N								
20	7905	12:55	1:20	25					E	N								
22	7750	1:25	1:50	25					E	N								
27	8120	1:55	2:10	15					E	N								
									E	N								

1 See bat forearm diagram on reverse of page.
3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: DD Dan DiMario (field notes author)

Quality Control: This form is complete ☑ & legible ☑
Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

ac w:\active\60961067\field_data\terrestrial\mortality_survey\2016\blank_data_forms\mortality-survey-observation_160961010.docx

FORM 019 / REV: 2016-12-06

Mortality Survey
Observation Form

Project No: 160961067
Date: Nov 15/2016
Start/End Time: 12:00am / 4:15pm

Project Name: Adelaide Wind Farm
Personnel: Dan DIlario

Weather Conditions: 14 TEMP (°C) | 13km / S WIND speed/direction | 15 CLOUD | 0 PPT | 0 PPT (last 24-hrs)

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration (min)	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
									E	N								
7	7915	12:00	12:20	20					E	N								
6	8075	12:25	12:40	15					E	N								
11	7765	12:45	1:00	15					E	N								
12	8180	1:05	1:25	20					E	N								
14	8240	1:30	1:50	20					E	N								
17	7920	1:55	2:15	20					E	N								
19	7815	2:20	2:45	25					E	N								
20	7775	2:50	3:15	25					E	N								
22	8165	3:20	3:45	25					E	N								
27	8200	3:50	4:15	25					E	N								
									E	N								

1 See bat forearm diagram on reverse of page.
3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: DD Dan DIlario (field notes author)

Quality Control: This form is complete ☑ & legible ☑
Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Mortality Survey Observation Form

SAR

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: NOV 22/2016 Personnel: Dan Dillon

Start/End Time: 8:30am / 4:20pm

Weather Conditions: 2 TEMP (°C) | 10km/NW WIND speed/direction | 20 CLOUD | 0 PPT | 0 PPT (last 24-hrs)

DECOMPOSITION CODES[2]: Fresh | Moderate | Complete | Early | Advanced | Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration (min)	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting E	Northing N	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
27	7805	8:30	8:55	25					E	N								
26	7875	9:00	9:25	25					E	N								
22	8160	9:30	9:45	15					E	N								
21	8105	9:50	10:05	15					E	N								
20	7980	10:10	10:25	15					E	N								
19	7770	10:30	10:45	15					E	N								
18	7965	10:50	11:15	25					E	N								
17	7455	11:10	11:35	25					E	N								
15	8030	11:40	12:00	20					E	N								
14	7735	12:05	12:30	25					E	N								
13	7960	12:35	12:55	20					E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

Print Name & Initial: DD Dan Dillon (field notes author)

Quality Control: This form is complete ☐ & legible ☑

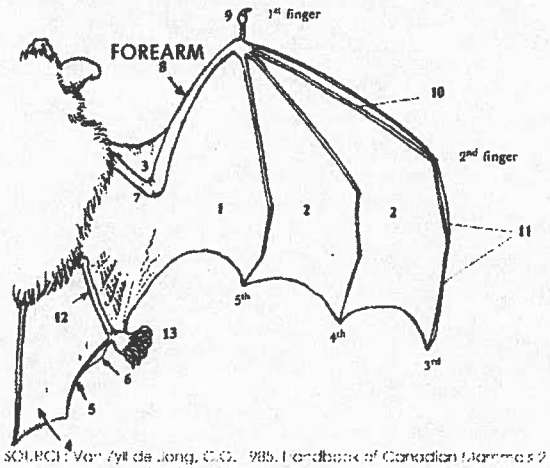
Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

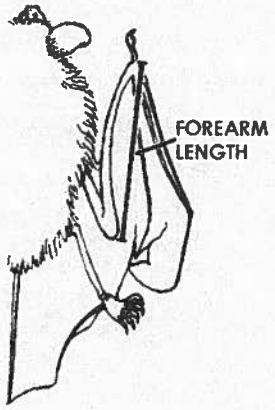
CONTINUED SITE: Adelaide Wind Farm DATE: Nov 22, 2016 Mortality Survey Observation Form

Turbine No.	Area (m^2)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
12	8180	1:00	1:25	25					E	N								
11	7885	1:30	1:55	25					E	N								
9	7780	2:00	2:25	25					E	N								
8	8165	2:30	2:55	25					E	N								
7	7745	3:00	3:25	25					E	N								
6	8080	3:30	3:55	25					E	N								
5	7975	4:00	4:20	20					E	N								
									E	N								

1 See bat forearm diagram below.
3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

BAT FOREARM DIAGRAM (note 1 above and on reverse of page)





SOURCE: Van Zyll de Jong, C.G. 1985. Handbook of Canadian Mammals 2 Bats. National Museum of Natural Sciences (Canada). Ottawa, Ontario. 212 pp.

PAGE 2 OF 2

Print Name & Initial: Dan Dilano (field notes author)

Quality Control: This form is complete ☐ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

FORM 019 / REV: 2016-12-06

Mortality Survey
Observation Form

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: May 29/2016 Personnel: DD Dan D Tkn

Start/End Time: 10:00am / 1:35pm

Weather Conditions: 13 TEMP (°C) | 19km / SW WIND speed/direction | 80 CLOUD | 0.3 PPT | 0.3 PPT (last 24-hrs)

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration (min)	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting E	Northing N	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
27	7600	10:00	10:20	20					E	N								
22	7825	10:25	10:40	15					E	N								
20	7950	10:45	11:10	25					E	N								
19	7540	11:15	11:40	25					E	N								
17	7880	11:45	12:05	20					E	N								
14	7905	12:10	12:45	35					E	N								
12	7740	12:50	1:05	15					E	N								
11	8065	1:10	1:15	5					E	N								
6	7870	1:20	1:35	15					E	N								
7	7715	1:40	1:55	15					E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 2

Print Name & Initial: DD Dan D Tkn (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

APPENDIX G2
FIELD FORMS (RAPTOR MONITORING PROGRAM)

Stantec

Stantec

Mortality Survey Observation Form

S.A.R. Reporting

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: May 4th 2016 Personnel: Nash Colville

Start/End Time: 8:45am / 2:45pm

Weather Conditions: 14°C (TEMP (°C)) 22Km/h SE (WIND speed/direction) clear (CLOUD) 0 (PPT) <1mm (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
8	7854	8:55	9:25	30min					E	N								
9	"	9:30	10:00	30min					E	N								
15	"	11:00	11:30	30min					E	N								
13	"	11:35	12:05	30min					E	N								
18	"	12:10	12:40	30min					E	N								
21	"	12:45	1:15	30min					E	N								
26	"	1:20	1:55	35min					E	N								
5	"	2:10	2:45	35min					E	N								
									E	N								
									E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

Print Name & Initial: Nash Colville N.C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Raptor Blitz

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: May 18th, 2016 Personnel: Nash Colville

Start/End Time: 9:45am / 1:40pm

Weather Conditions: 20°C (TEMP (°C)) 13km/h / W (WIND speed/direction) Fair (15%) (CLOUD) 0 (PPT) — (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
5	7854	9:55	10:10	15mins					E	N								
8	6500	10:15	10:30	15mins					E	N								
9	7854	10:35	10:50	15mins					E	N								
13	7854	11:00	11:20	20mins					E	N								
15	3000	11:25	11:40	15mins					E	N								
18	7854	11:55	12:10	15mins					E	N								
21	7854	12:25	12:40	15mins					E	N								
26	7854	12:50	1:05	15mins					E	N								
									E	N								
									E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash C (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

S.A.R. Reporting (week 3, full search 2)

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: June 1st Personnel: Nash Colville

Start/End Time: 10:00 am / 3:00 pm

Weather Conditions: 25°C (TEMP (°C)) 17 km/h / SE (WIND speed/direction) Clear (5%) (CLOUD) 0 (PPT) – (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
5	7854	10:15	10:45	30 mins					E	N								
8	"	10:50	11:20	30 mins					E	N								
9	"	11:20	11:50	30 mins					E	N								
13	"	11:55	12:25	30 mins					E	N								
15	"	12:30	1:00	30 mins					E	N								
18	"	1:00	1:30	30 mins					E	N								
21	"	1:35	2:05	30 mins					E	N								
26	"	2:10	2:45	35 mins					E	N								
									E	N								
									E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

Print Name & Initial: Nash Colville (field notes author)

Quality Control: This form is complete ☐ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form Raptor Blitz

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: June 8th, 2016 Personnel: Nash Colville

Start/End Time: 10:50am / 1:00pm

Weather Conditions: 14°C (TEMP (°C)) 24km/h / SE (WIND speed/direction) Overcast (CLOUD) <1mm (PPT) 1-3mm (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
5	7854	10:00	11:15	15mins					E	N								
8	7000	11:20	11:30	10mins					E	N								
9	7854	11:35	11:50	15mins					E	N								
13	7854	11:55	12:05	10mins					E	N								
15	3000	12:10	12:20	10mins					E	N								
18	7854	12:25	12:40	15mins					E	N								
21	7854	12:45	1:00	15mins					E	N								
26	Construction*								E	N								
									E	N								
									E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

*Access Road dug up/being replaced

PAGE 1 OF 1

Print Name & Initial: Nash Colville N.C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

S.A.R. Reporting

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: June 15th Personnel: Nash Colville

Start/End Time: 10:45 am / 3:15 pm

Weather Conditions: 21°C (TEMP (°C)) 13km/h / S (WIND speed/direction) Overcast (70%) ~5mm (CLOUD) 1-2mm (PPT) (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
5	7854	10:55	11:25	30 mins					E	N								
8	"	11:30	12:05	35 mins					E	N								
9	"	12:10	12:40	30 mins					E	N								
13	"	12:45	1:15	30 mins					E	N								
15	"	1:15	1:45	30 mins					E	N								
18	"	1:50	2:20	30 mins					E	N								
21	"	2:25	2:55	30 mins					E	N								
26	Construction								E	N								
									E	N								
									E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash Colville N.C. (field notes author)

Quality Control: This form is complete ☐ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Raptor Blitz

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: June 22nd, 2016 Personnel: Nash Colville

Start/End Time: 10:50am / 1:30pm

Weather Conditions: 24°C (TEMP (°C)) 19km/h / N (WIND speed/direction) Clear(5%) (CLOUD) — (PPT) — (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
5	7854	11:00	11:15	15 mins					E	N								
8	6500	11:20	11:40	20 mins					E	N								
9	7854	11:45	12:00	15 mins					E	N								
13	7854	12:05	12:25	20 mins					E	N								
18	7854	12:30	12:50	20 mins					E	N								
21	7854	1:00	1:20	20 mins					E	N								
26	TURBINE CONSTRUCTION								E	N								
15	maintenance								E	N								
									E	N								
									E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

RAPTOR BUTTE

Project No: ~~160961073~~ 160961067 Project Name: ~~K2 Wind Farm~~ Adelaide

Date: June 27, 2017 Personnel: Brennan Obermayer

Start/End Time: 08:45 / 13:00

Weather Conditions: 28-30 (TEMP (°C)) | S-10 W (WIND speed/direction) | 15 (CLOUD) | 0 (PPT) | rain (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
21	R	08:54	09:04	10					E	N								
18	R	09:14	09:21	7					E	N								
15	R	09:28	09:39	11					E	N								
13	R	09:44	09:50	6					E	N								
9	R	12:12	12:18	6					E	N								
8	R	12:28	12:34	6					E	N								
5	R	12:45	12:51	6					E	N								
									E	N								
									E	N								
									E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Brennan Obermayer (field notes author)

Quality Control: ☒ This form is complete ☒ & legible

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Raptor Blitz

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: July 6th 2016 Personnel: Nash Colville

Start/End Time: 11:25 am / 2:25 pm

Weather Conditions: 28 (TEMP (°C)) 16 km/h / S (WIND speed/direction) Fair (15%) (CLOUD) 0 (PPT) — (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
5	7854	11:35	11:50	15 mins					E	N								
8	6500	11:55	12:10	15 mins					E	N								
9	7854	12:15	12:30	15 mins					E	N								
13	7854	12:35	12:50	15 mins					E	N								
15	3000	12:55	1:10	15 mins					E	N								
18	7854	1:15	1:30	15 mins					E	N								
21	7854	1:35	1:50	15 mins					E	N								
26	7854	1:55	2:10	15 mins					E	N								
									E	N								
									E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☐ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Raptor Blitz

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: July 13th 2016 Personnel: Nash Colville

Start/End Time: 11:35am / 2:35pm

Weather Conditions: 29 (TEMP °C) 6km/h / NW (WIND speed/direction) Few Clouds (20%) (CLOUD) ○ (PPT) — (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
5	7854	11:45	12:00	15mins					E	N								
8	5000	12:05	12:15	10mins					E	N								
9	7854	12:20	12:35	15mins					E	N								
13	7854	12:40	12:55	15 min					E	N								
15	3000	1:00	1:10	10mins					E	N								
18	7854	1:20	1:35	15mins					E	N								
21	Construction								E	N								
26	7854	2:00	2:20	20mins					E	N								
									E	N								
									E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

Raptor Blitz

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: July 19th Personnel: Nash Colville

Start/End Time: 11:10am / 2:00pm

Weather Conditions: 26 (TEMP (°C)) 23km/h / NW (WIND speed/direction) Fair (15%) (CLOUD) 0 (PPT) / (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
5	7854	11:20	11:35	15min					E	N								
8	4000	11:40	11:50	10min					E	N								
9	7854	11:55	12:05	10 min					E	N								
13	7854	12:10	12:25	15min					E	N								
15	3000	12:30	12:45	15min					E	N								
18	7854	12:50	1:05	15min					E	N								
21	7854	1:10	1:25	15min					E	N								
26	7854	1:30	1:45	15min					E	N								
									E	N								
									E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☐ & legible ☐

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

S.A.R. Reporting

Project No: 160961067 Project Name: Adelaide Wind Farm

Date: July 27th Personnel: Nash Colville

Start/End Time: 10:20am / 1:35pm

Weather Conditions: 31 (TEMP (°C)) | 15km/h / W (WIND speed/direction) | Fair (10%) (CLOUD) | 0 (PPT) | — (PPT (last 24-hrs))

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
5	7854	10:30	11:00	30min					E	N								
8	7854	11:05	11:35	30min	Hoary Bat	N/A	51mm	17	E 045 1177	N 476 3397	Moderate	48hrs	unknown	28	E	Shrubbery	2	T80T2T01
9	7854	11:40	12:15	35min					E	N								
13	7854	12:20	12:50	30min					E	N								
15	7854	12:55	1:25	30min					E	N								
									E	N								
18, 21 and 26 incomplete due to field staff going home sick *									E	N								
									E	N								
									E	N								
									E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: Nash C. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec

Mortality Survey Observation Form

SAR Turbines

Project No: 160961067 Project Name: Adelaide

Date: July 29/16 Personnel: MStraus

Start/End Time: 1030 pm / 1200 noon

(17)

Weather Conditions:	25	9 / NE	50	0	0
	TEMP (°C)	WIND speed/direction	CLOUD	PPT	PPT (last 24-hrs)

DECOMPOSITION CODES[2]:

Fresh	Moderate	Complete
Early	Advanced	Scavenged

% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS[4]
≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm[1] (mm)	UTM Coordinates Zone	Easting	Northing	Decomposition Code[2]	Est. Hours Since Death	Injury[3] Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class[4]	Photo #
21	Full	1030	11:08	38s					E	N								
26	Under maintenance								E	N								
18	Under maintenance - but allowed pick up bat reported incedentally yesterday am								E =>	N								
18	0	1300	1305	5min	Hoary Bat	F	53	17	E 443791	N 4965062	medbat	48h.	none visible	4m	W	gravel	1	Photo
									E	N								
									E	N								
									E	N								
									E	N								
									E	N								
									E	N								
									E	N								
									E	N								

1 See bat forearm diagram on reverse of page.

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

PAGE 1 OF 1

Print Name & Initial: MJS (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

Stantec Consulting Ltd.
1 – 70 Southgate Drive
Guelph, ON
Canada N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Raptor Behaviour Driving Survey Form

Project Number: 160961067 Project Name: Adelaide

Date: April 15, 2016 Field Personnel: Melissa Straus

Weather Conditions:	TEMP (°C):	WIND:	CLOUD:	PPT:	PPT (in last 24 hrs):
	10°-18°C	1-3	0	0	0

Start Time: 1045 **End Time:** 1600

Total KM Driven: ~ 50km

Raptor No. (as on map)	Time	Species & No.	Age/Sex (if determined)	Height* (m)	Habitat	Behaviour (i.e. hunting, perching, actively migrating)
1	1045	TUVU x2	?	Below AH	FOREST	Perched @ old dead broken early tree.
2	1100	TUVU x4	?	ABOVE	Forest/Ag	Riding thermals (hunting)
3	11:20	TUVU x2	?	At	"	"
4	1130	TUVU x2	?	ABOVE	Forest	"
5	1136	"	?	At	Ag	Hunting/Scavenging
6	1140	RTHA	Adult	Below	Riparian	Perched
7	1200	TUVU x2	?	At	Forest	Thermals (Scavenging)
8	1210	"	?	At	Forest	"
9	1240	TUVU x4	?	Above	Forest	"
10	1330	RTHA x1	Adult	At	Forest	@ nest - left
11	1430	TUVU x2	?	Above	Forest	Soaring thermals
12	1445	TUVU x4	?	At	Forest	2 soar 2 perched
13	1454	RTHA	Adult	At	Ag	Hunting
14	1510	TUVU	?	Above	Forest	Soaring thermals
15	1525	TUVU		At	Ag	

** Height of blade sweep varies from project to project; check with project manager.*

Pg. 1 of 1

Signature: Melissa Straus (Field Personnel)

Quality Control: This form is complete ☑ & legible ☑.

Signature: Anna Corrigan (Project Manager)

REV: 2011-05-06 / FORM 036b

MARSHALL RESERVOIR RESTRICTED

435000 440000 445000 450000

4770000 4765000 4760000

Lamon Drive
Sylvan Road
Fossil Road
River Drive
Rodrick Road
Kenwood Road
Hodgins Road
Haskett Road
Island Road
Centre Road
Elm Tree Drive
Bornish Drive
Fort Rose Road
Cameron Road
Springbank Road
Wyatt Road
Glasgow Street
Ausable Road
Townsend Line
Bimam Line
Langan Drive
Wilson Road
Brick Yard Line
Cuddy Drive
Jordan Road
Egremont Road
Morse Road
School Road
Robothan Road
Highway 402
Zion Line
Sullivan Road
Brown Road
Seed Road
Mullifarry Drive
Pike Road
Pannell Lane
Drury Lane
Hull Road
Head Street North
Wright Street
Adair Boulevard
2nd Street
Hickory Drive
Highway 402
Glengyle Drive
Mcewen Drive
Wood Road
Petty Street
Poplar Hill Road
Fletcher Road
Argyle Street
Peddon Road
Fernhill Drive
Wardell Drive
Cathie Drive
Hensell Road
Egremont Drive
Hereford Road
Rose Road
Coldstream Road

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27

1A

clump

Stained

lump not in good condition but present

pen = after a break for lunch

W:\active\160960710\drawing\MXD\Terrestrial\Post_Con_Monitoring\2015\160960710_Post_Con_Monitoring_SupplementalRaptorStudyArea_20150210.mxd
Revised: 2016-02-10 By: mkraus

Stantec

Legend

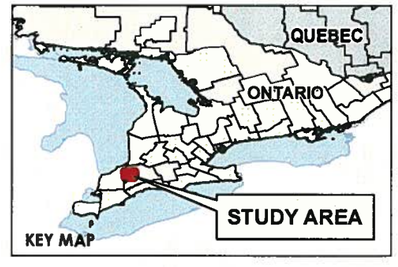
- Project Boundary
- Raptor Study Area

Project Components

- MET Tower
- Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody



Notes

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0 1,500 3,000 m
1:60,000

February 2016
160960710

Client/Project

Suncor Energy
Adelaide Wind Project

Figure No.
2

Title
Supplemental Raptor Study Area (2016-2017)

Stantec **Stantec Consulting Ltd.**
1 - 70 Southgate Drive, Guelph ON N1G 4P5

Nest Search Survey Form

Project Number: 160961067 Project Name: Adelaide
Date: April 5/2016. Field Personnel: Melissa Straus
Start / End Time: 1015 / 1600 Other Personnel:
specify organization(s)

Weather Conditions:	11°C	1	0	0	0
	TEMP (°C)	WIND	CLOUD	PPT (current)	PPT (last 24 hrs)

Description of Area Searched:
Agriculture landscape. Scanned edges of all woodlots. Ones near turbines scanned to boundaries

Species Observed (with highest breeding evidence code):
TUVU RTHA. CHFROA.
MODO COGR
EUST CAGO
AMKE
OSP

Nests Found:

SPECIES	BUFFER MARKED (radius, m)	UTM COORDINATES Zone	Easting	Northing	DESCRIPTION OF NEST LOCATION & COMMENTS
TUVU - possible roost (A) overview Map	N/A	17	E 439709	N 4763049	2 adults observed sitting on tree w large broken top and hollow in the middle. Took off to fly thermals after sitting for ~5-10 mins @ 1045 AM
Bump @ a distance (B)	N/A.		E	N	later saw from other side – [redacted] hard to tell.
(C) Am. Crow	N/A		E	N	Crow nest
(D) RTHA	N/A.	17	E 447748	N 4763394	viewing location Active – adult on nest Approx. middle of woodlot btw fence row – agricultural land
(E) RTHA	N/A	17	E 449538	N 4763097	view location Size consistent w RTHA, To. 20m back from tree edge. Will have to go through field to view when leaves come out.

Action Taken:
Mossy bits hanging ↓
No activity 20 mins. Checked w scope.
Nothing on nest.
Super canopy tree 2-3m ↓ from top.

Print Name & Initial: MAS. (field notes author)
Quality Control: This form is complete ☑ & legible ☑
Print Name & Initial: Anna Corrigan (field notes QA/QC personnel)

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Revised: 2016-04-14 By: dharvey

Stantec

Legend

- Raptor Study Area

Project Components

- MET Tower
- Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

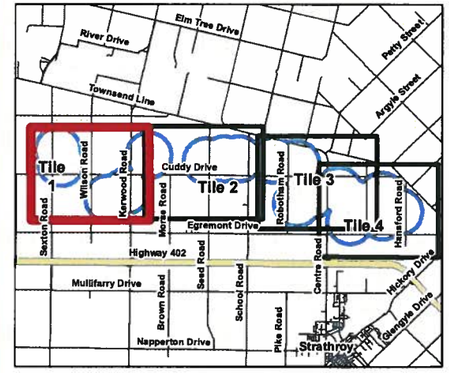
Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody

see raptor locations noted on overview map.

DRAFT- For Field Use

Not all on here.



Notes

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April 2016
1609607 10

Client/Project

Suncor Energy
Adelaide Wind Project

Figure No.

Tile- 1

Title

Field Map Book

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Revised: 2016-04-14 By: dmcvey
4762500

Stantec

Legend

- Raptor Study Area

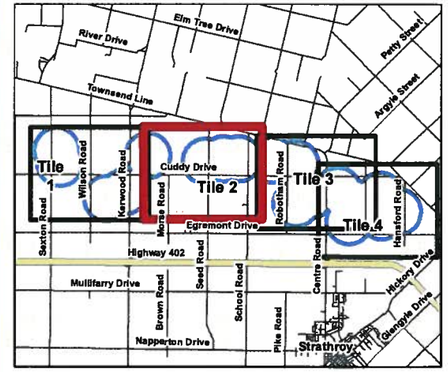
Project Components

- MET Tower
- Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody

DRAFT- For Field Use



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April 2016
1609607 10

Client/Project

Suncor Energy
Adelaide Wind Project

Figure No.

Tile- 2

Title

Field Map Book

Stantec

Legend

- Raptor Study Area

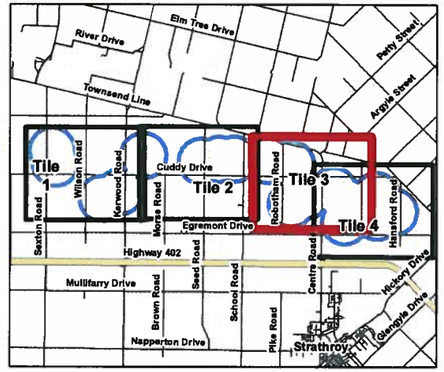
Project Components

- MET Tower
- Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody

DRAFT- For Field Use



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April 2016
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Client/Project

Suncor Energy
Adelaide Wind Project

Figure No.

Tile- 3

Title

Field Map Book

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Revised: 2016-04-14 By: dharvey

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Revised 2016-04-14 By: dharvey

Stantec

Legend

- Raptor Study Area

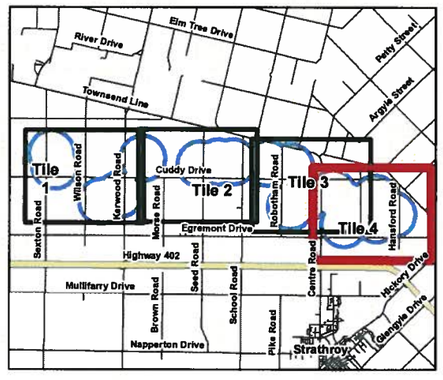
Project Components

- MET Tower
- Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody

DRAFT- For Field Use



Notes

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April 2016
160960710

Client/Project

Suncor Energy
Adelaide Wind Project

Figure No.

Tile- 4

Title

Field Map Book

Stantec Consulting Ltd.
70 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Raptor Behaviour Driving Survey

Project Number: 160960107. Project Name: Adelaide

Date / Time: June 15/16. Field Personnel: M. Straus

Weather Conditions:	Temp: 20	Wind: 2	Cloud: 100	PPT: Rain	PPT in last 24 hrs: 0

_____ total km driven on survey

Raptor # (as on map)	Time	Species and #	Age/sex (if determined)	Height	Habitat	Behaviour (i.e. hunting, perching, actively migrating)
A	11:00	~~RTHA~~ TUVU x1	?	>Turbine	Woodlot	Hunting.
B	1545	TUVU x2	?	>T	"	"
C	16:15	TUVU x2.	?	>T	"	"
D	1620	TUVU x1	?	1m	Ag/Road	Perched – flew 570. Same?
E	1630	TUVU x1	Adult.	20m	Ag/Woodlot	Perched edge of woodlot
F	1640	RTHA	Adult.	>T	Woodlot	gliding east
G	1700	TUVU x2	?	>T	woodlot	Hunting

same?

Quality Control. This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel) Signature: _____ (Project Manager)

435000

4765000

N

Sexton Road

27

26

Brick Yard Line

Guidy Drive

0 225 450 m

1:9,000

435000

4765000

W:\active\160960710\drawing\MXD\Terrestrial\Birds\160960710_Fig01_Raptor_Mapbook_20160210.mxd
Revised: 2016-02-10 By: mlraus

Stantec

Legend

- Project Boundary
- Raptor Study Area

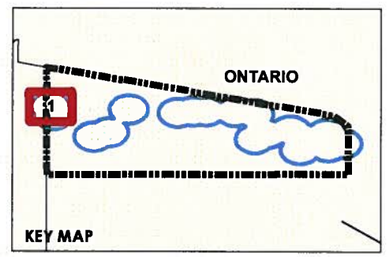
Project Components

- MET Tower
- Turbine Location
- Proposed Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody

No Access
- Repairing T26



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February 2016
160960710

Client/Project

Suncor Energy
Adelaide Wind Project

Figure No.

Tile 1

Title

Supplemental Raptor Study Area (2016-2017) Mapbook

435000

4765000

N

27

26

Sexton Road

Brick Yard Line

Cuddy Drive

Wilson Road

Sexton Road

Wilson Road

0 225 450 m

1:9,000

435000

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Revised: 2016-02-10 By: mkraus

Stantec

Legend

- Project Boundary
- Raptor Study Area

Project Components

- MET Tower
- Turbine Location
- Proposed Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
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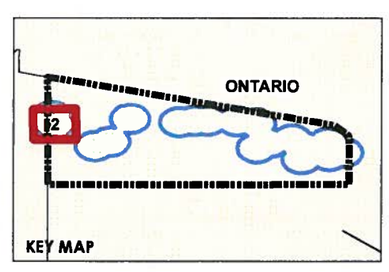
- Watercourse
- Constructed Drain
- Waterbody



Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2013.
3. Orthographic Imagery provided by Suncore, 2011. Imagery taken in Spring 2010.

February 2016
160960710

Client/Project

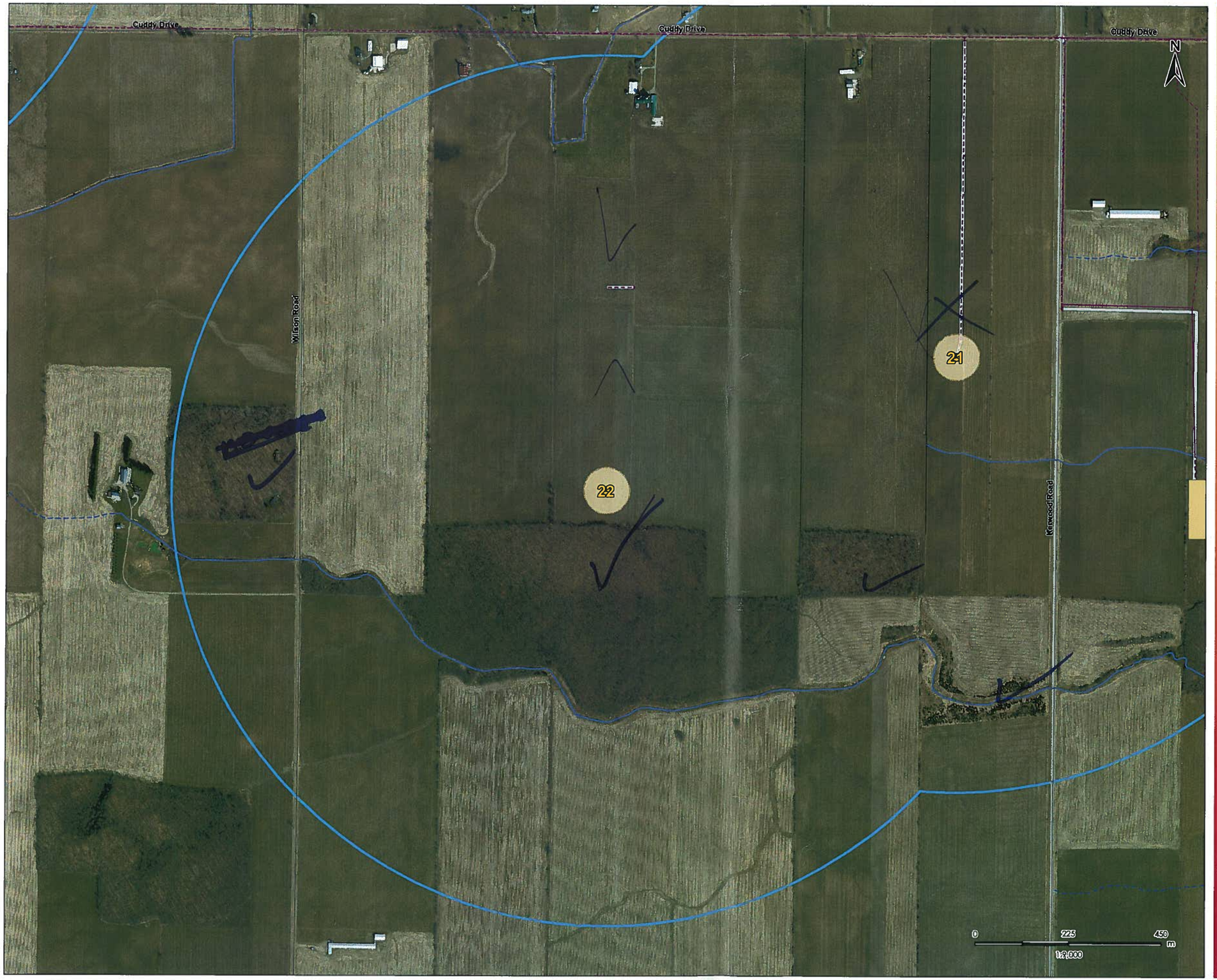
Suncor Energy
Adelaide Wind Project

Figure No.

Tile 2

Title

Supplemental Raptor Study Area (2016-2017) Mapbook



W:\active\160960710\drawing\MXD\Terrestrial\Birds\160960710_Fig01_Raptor_Mapbook_20160210.mxd
Revised: 2016-02-10 By: mkraus

Stantec

Legend

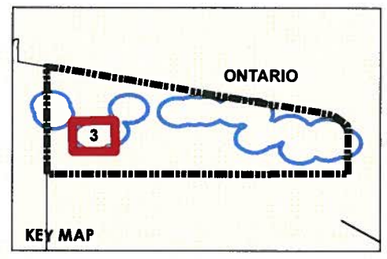
- Project Boundary
- Raptor Study Area

Project Components

- MET Tower
- Turbine Location
- Proposed Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody



Notes

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Client/Project

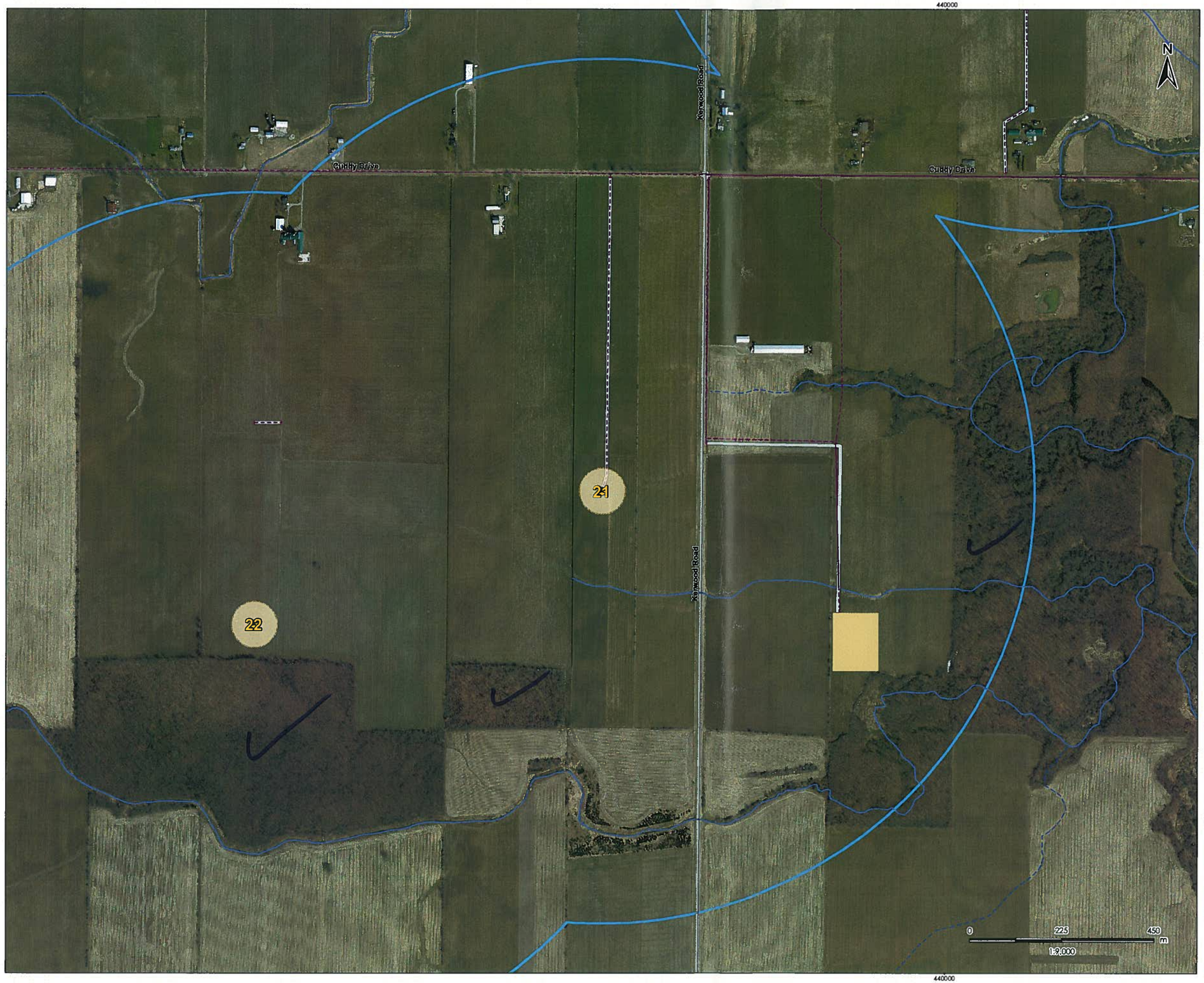
Suncor Energy
Adelaide Wind Project

Figure No.

Tile 3

Title

Supplemental Raptor Study Area (2016-2017) Mapbook



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Revised: 2016-02-10 By: mkraus

Stantec

Legend

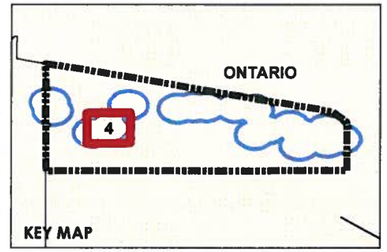
- Project Boundary
- Raptor Study Area

Project Components

- MET Tower
- Turbine Location
- Proposed Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody



Notes

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Client /Project

Suncor Energy
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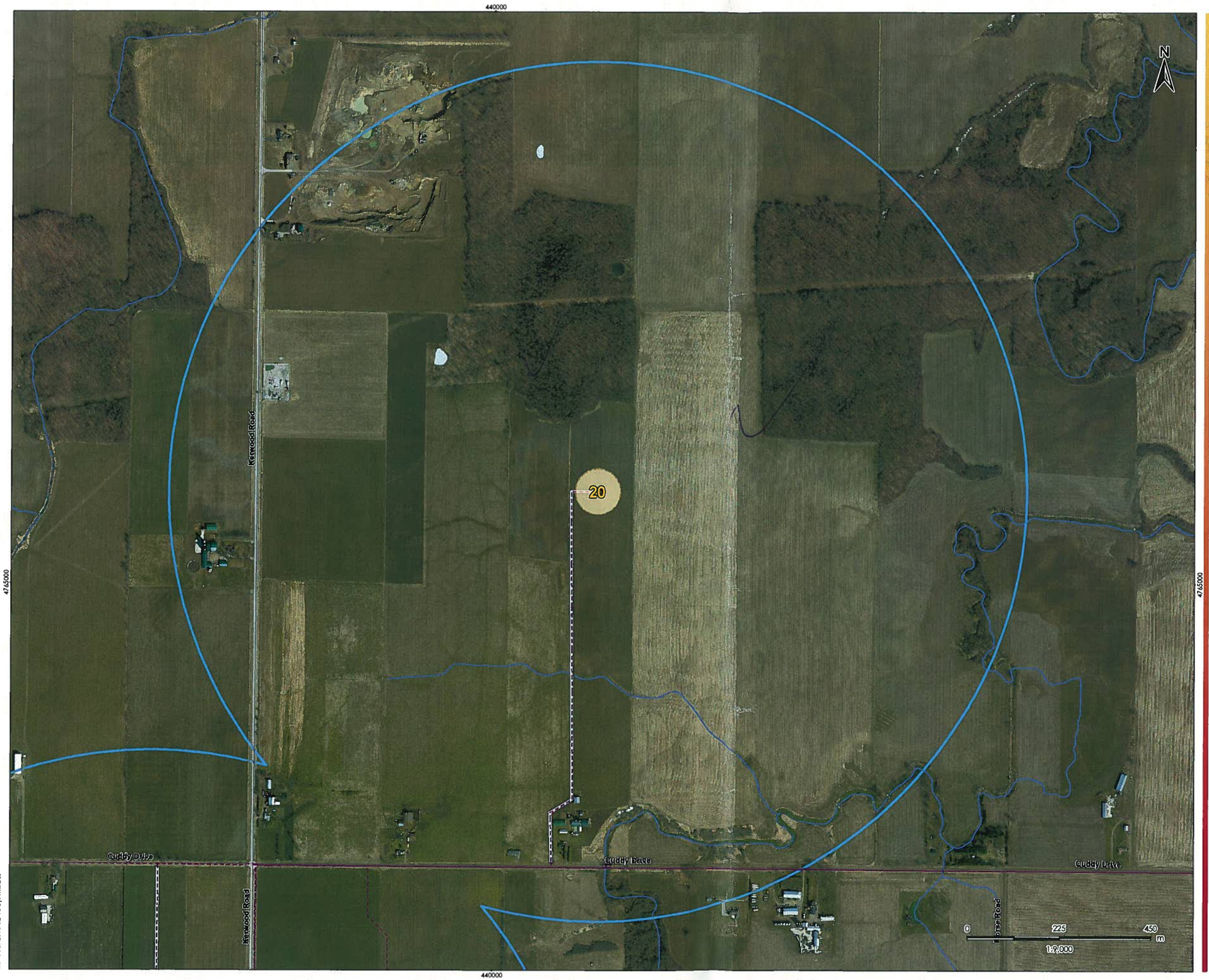
Figure No.

Tile 4

Title

Supplemental Raptor Study Area (2016-2017) Mapbook



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Revised: 2016-02-10 By: mkraus

Stantec

Legend

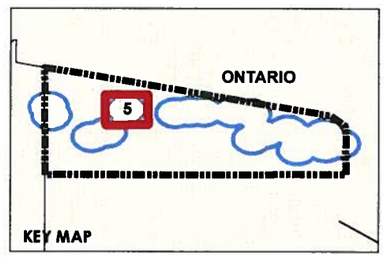
- Project Boundary
- Raptor Study Area

Project Components

- MET Tower
- Turbine Location
- Proposed Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody



Notes

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Client/Project

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Adelaide Wind Project

Figure No.

Tile 5

Title

Supplemental Raptor Study Area (2016-2017) Mapbook

Stantec

Legend

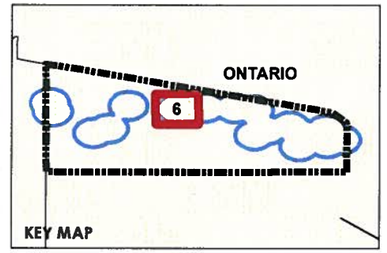
- Project Boundary
- Raptor Study Area

Project Components

- MET Tower
- Turbine Location
- Proposed Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody



Notes

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Client/Project

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Figure No.

Tile 6

Title

Supplemental Raptor Study Area (2016-2017) Mapbook

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Revised: 2016-02-10 By: mtraus

Stantec

Legend

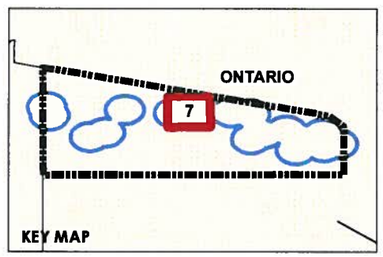
- Project Boundary
- Raptor Study Area

Project Components

- MET Tower
- Turbine Location
- Proposed Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody



Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
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Client/Project

Suncor Energy
Adelaide Wind Project

Figure No.

Tile 7

Title

Supplemental Raptor Study Area (2016-2017) Mapbook

445000

4765000

Centre Road

Centre Road

N

Seed Road

School Road

18

17

Cuddy Drive

Cuddy Drive

Seed Road

School Road

0 225 450 m

1:9,000

445000

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Revised: 2016-02-10 By: mkraus

Stantec

Legend

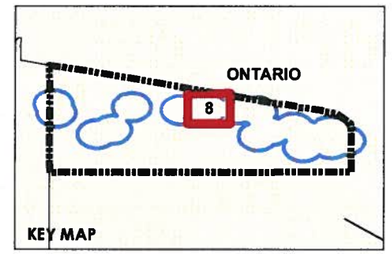
- Project Boundary
- Raptor Study Area

Project Components

- MET Tower
- Turbine Location
- Proposed Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody



Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
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Client/Project

Suncor Energy
Adelaide Wind Project

Figure No.

Tile 8

Title

Supplemental Raptor Study Area (2016-2017) Mapbook

445000

Centre Road

Centre Road

Centre Road

School Road

Robotham Road

15

14

Guddy Drive

Guddy Drive

Guddy Drive

School Road

Robotham Road

4765000

4765000

445000

N

0 225 450 m

1:9,000

Stantec

Legend

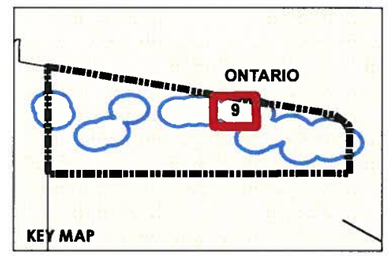
- Project Boundary
- Raptor Study Area

Project Components

- MET Tower
- Turbine Location
- Proposed Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody



Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2013.
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Client/Project

Suncor Energy
Adelaide Wind Project

Figure No.

Tile 9

Title

Supplemental Raptor Study Area (2016-2017) Mapbook

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Revised: 2016-02-10 By: mkraus

Stantec

Legend

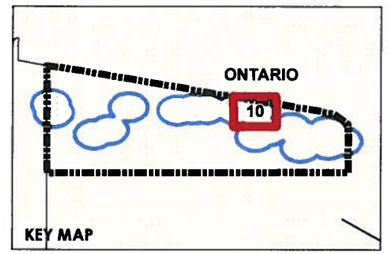
- Project Boundary
- Raptor Study Area

Project Components

- MET Tower
- Turbine Location
- Proposed Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody



Notes

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Client/Project

Suncor Energy
Adelaide Wind Project

Figure No.

Tile 10

Title

Supplemental Raptor Study Area (2016-2017) Mapbook

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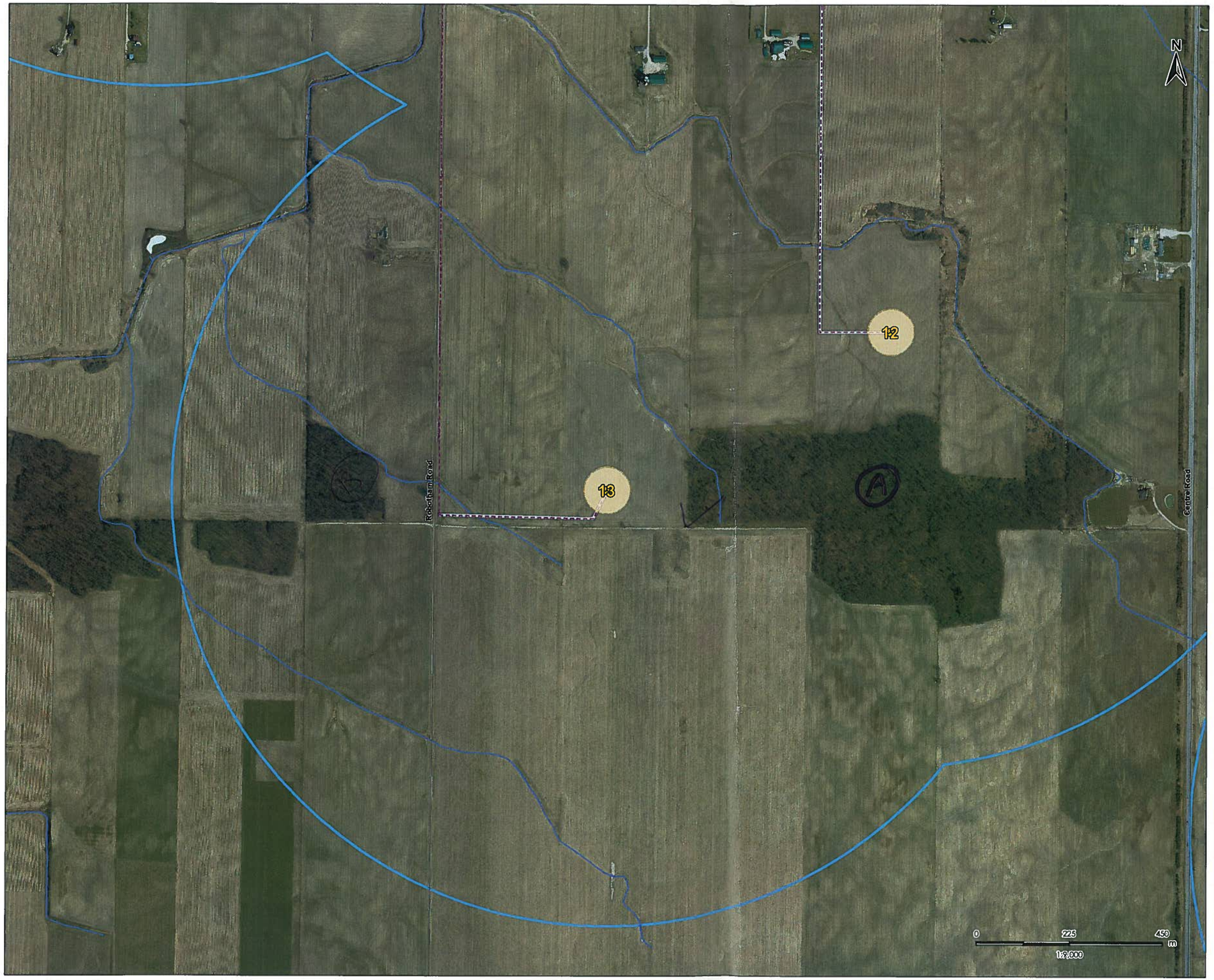
Revised: 2016-02-10 By: mkraus



Stantec

Legend

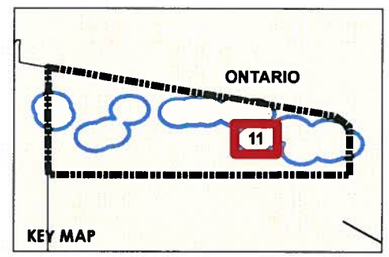
- Project Boundary
- Raptor Study Area

Project Components

- MET Tower
- Turbine Location
- Proposed Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody



Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
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Figure No.

Tile 11

Title

Supplemental Raptor Study Area (2016-2017) Mapbook

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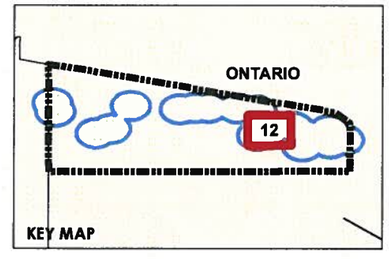

Stantec

Legend

- Project Boundary
- Raptor Study Area

Project Components

- MET Tower
- Turbine Location
- Proposed Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody

Notes

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Client/Project

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Figure No.

Tile 12

Title

Supplemental Raptor Study Area (2016-2017) Mapbook

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Revised: 2016-02-10 By: mkraus

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Revised: 2016-02-10 By: mkraus

Stantec

Legend

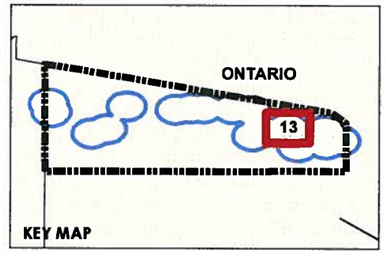
- Project Boundary
- Raptor Study Area

Project Components

- MET Tower
- Turbine Location
- Proposed Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody



Notes

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Client/Project

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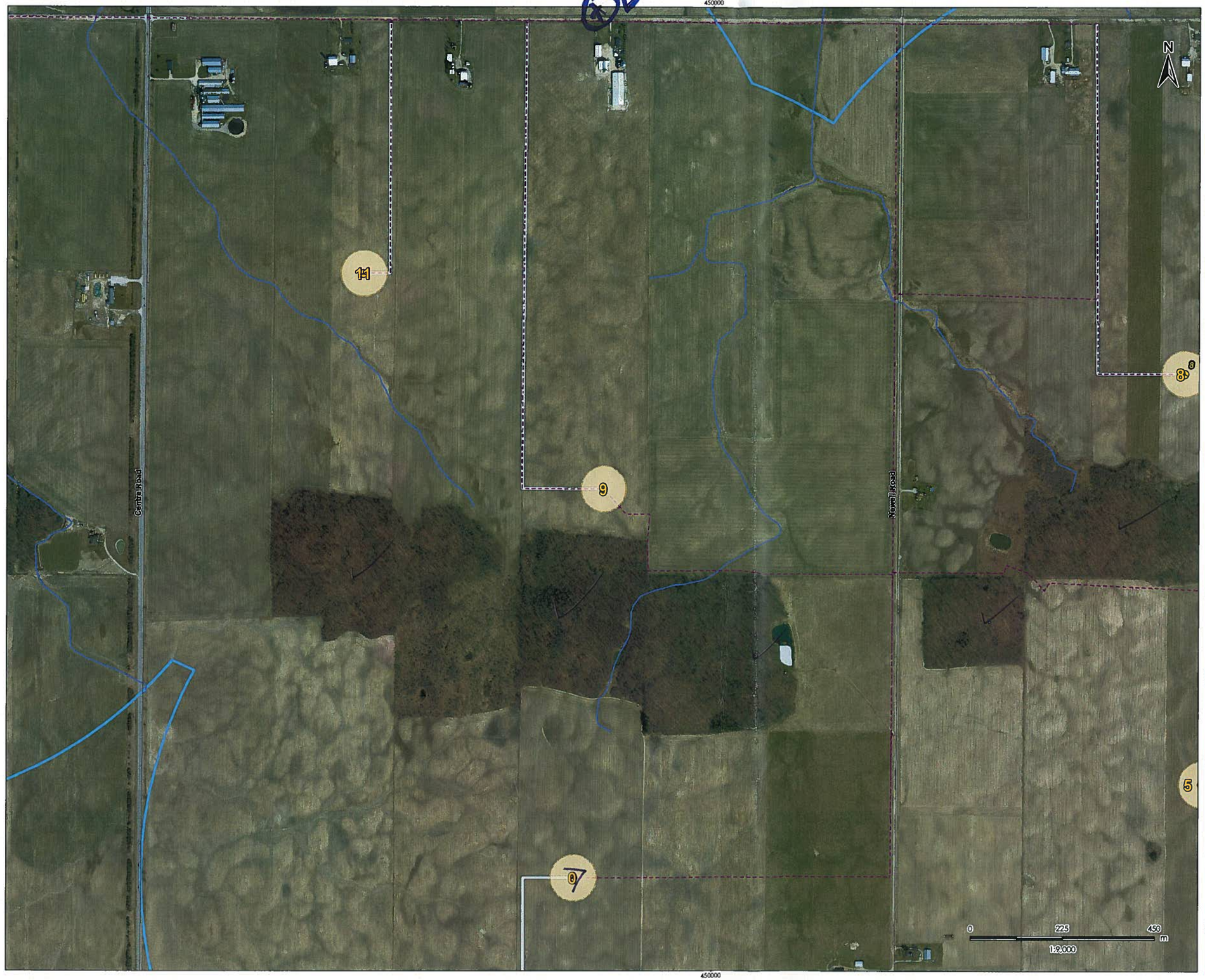
Figure No.

Tile 13

Title

Supplemental Raptor Study Area (2016-2017) Mapbook



Stantec

Legend

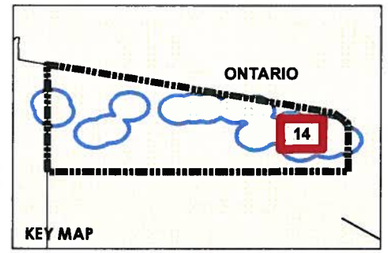
- Project Boundary
- Raptor Study Area

Project Components

- MET Tower
- Turbine Location
- Proposed Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody



Notes

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Client/Project

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Figure No.

Tile 14

Title

Supplemental Raptor Study Area (2016-2017) Mapbook

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Revised: 2016-02-10 By: mkraus

450000

9

Centre Road

Kerwill Road

Egremont Drive

Egremont Drive

Egremont Drive

Egremont Drive

Centre Road

Centre Road

0 225 450 m

1:9,000

450000

N

Stantec

Legend

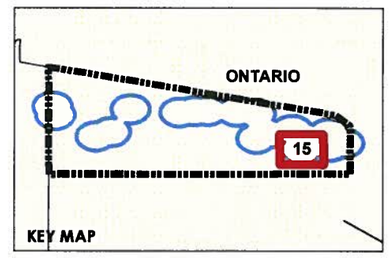
- Project Boundary
- Raptor Study Area

Project Components

- MET Tower
- Turbine Location
- Proposed Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody



Notes

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Client/Project

Suncor Energy
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Figure No.

Tile 15

Title

Supplemental Raptor Study Area (2016-2017) Mapbook

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Revised: 2016-02-10 By: mkraus

Stantec

Legend

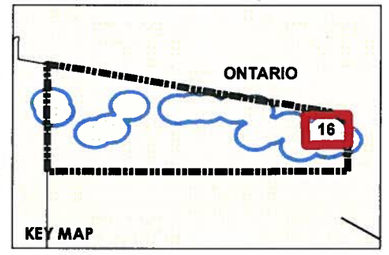
- Project Boundary
- Raptor Study Area

Project Components

- MET Tower
- Turbine Location
- Proposed Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody



Notes

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Client/Project

Suncor Energy
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Figure No.

Tile 16

Title

Supplemental Raptor Study Area (2016-2017) Mapbook

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Stantec

Legend

- Project Boundary
- Raptor Study Area

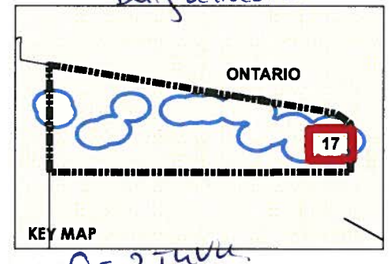
Project Components

- MET Tower
- Turbine Location
- Proposed Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody

(F) @ 1640
@ 1700 - mobbed by < Blackbird. Landed
@ (X) refused to leave woodlot area, back + forth being attached.



9 = 2 Turkey Vult.

Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
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Client/Project

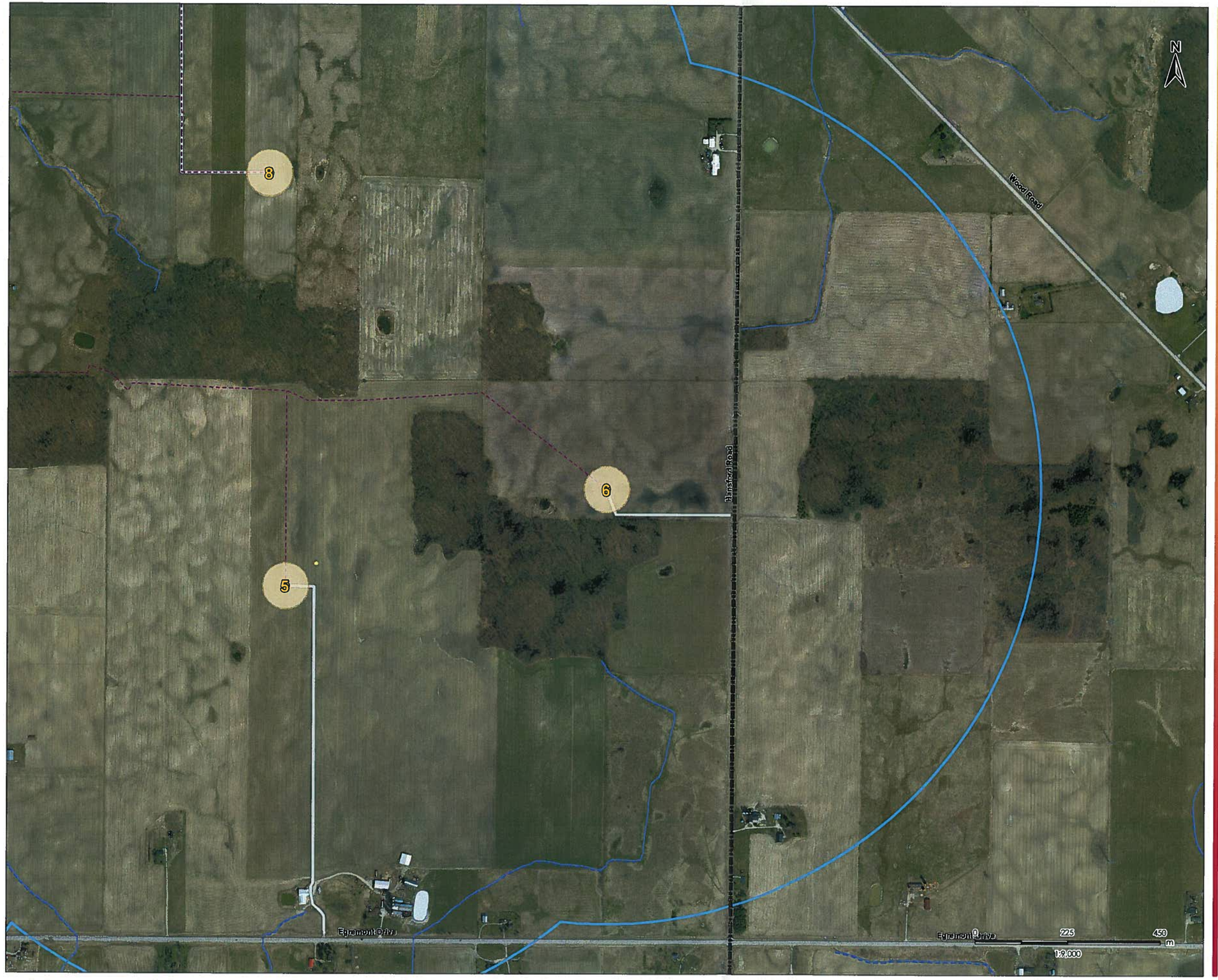
Suncor Energy
Adelaide Wind Project

Figure No.

Tile 17

Title

Supplemental Raptor Study Area (2016-2017) Mapbook



Stantec

Legend

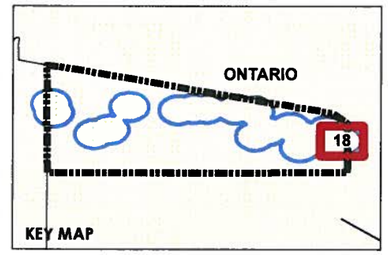
- Project Boundary
- Raptor Study Area

Project Components

- MET Tower
- Turbine Location
- Proposed Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody



Notes

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Client/Project

Suncor Energy
Adelaide Wind Project

Figure No.

Tile 18

Title

Supplemental Raptor Study Area (2016-2017) Mapbook

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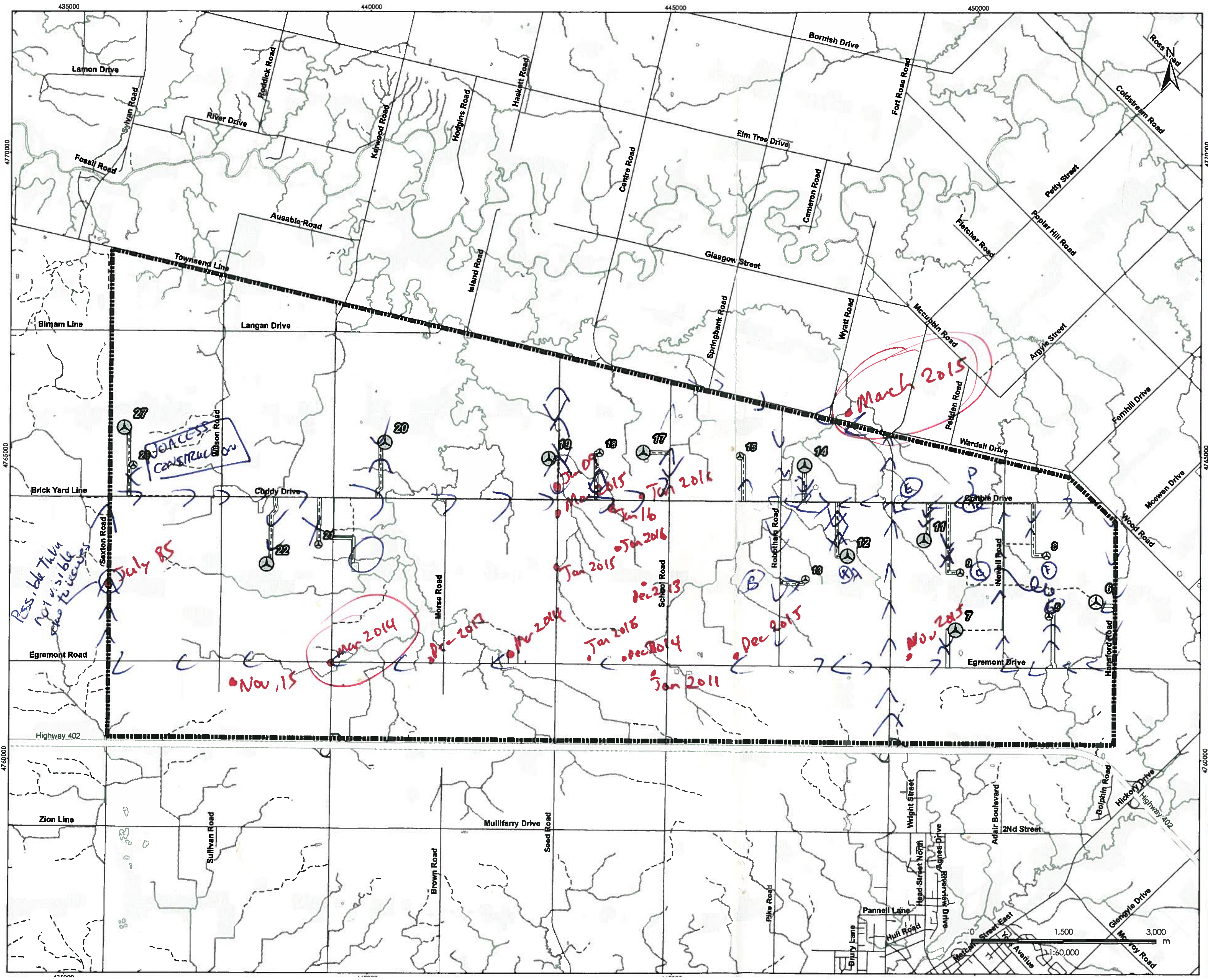
Revised: 2015-04-17 By: dharvey



Stantec

Legend

▭	Project Boundary
⊛	Turbine Subset

Project Components

○	MET Tower
⊛	Turbine Location
═	Access Road
----	Collector Line
▨	Substation Constructible Area

Existing Features

═	Expressway / Highway
—	Road
—	Watercourse
----	Constructed Drain
☐	Waterbody

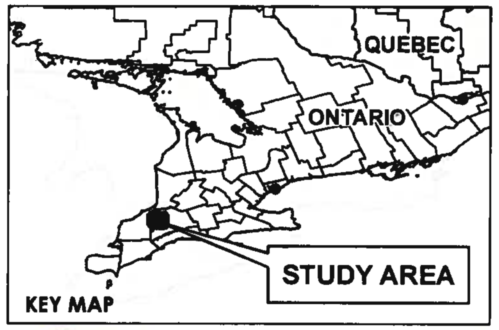
Time - 11-1300 = Behaviour
1400-1700 = Driving Surveys
Sunny 17
430

Ⓐ TUVU over woodlot @ 11:00am

RTHA

Ⓑ TUVU " @ 1545
x2

Ⓒ TUVU - off @ 16:05
x 2 [same as B?]



Notes Ⓓ TUVU perched on disposal bin
flew off · 1620

1. Coordinate System: NAD 1983 UTM Zone 17N
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Ⓔ Perched TUVU @ 1630
(Same as D?)

April 2015
160960710

Client/Project

Ⓕ RTHA gliding 1640
above forest

Suncor Energy
Adelaide Wind Project

Figure No.
1

G = 2TUVU @ 1700
[same as C?]

Title

Post-construction Monitoring
EEMP Turbine Subset

Stantec Consulting Ltd.
1 – 70 Southgate Drive
Guelph, Ontario N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Nest Monitoring Survey Form

Project Number: 160960667. Project Name: Adelaide.

Feature ID: T 12 (indicate on map) UTM Coordinates: 17 (Zone) 447748 (Easting) 4876339. (Northing)

Species: Red-tailed Hawk.

VISIT No.: 2 (1=found in April).

Date: May 12, 2016. Field Personnel: M. Straus

Time: 9:30-1015.

Weather Conditions:	TEMP (°C)	WIND	CLOUD	PPT	PPT last 24 hrs
	20°C	3	0	0	0

NOTES:

Adult on nest - 45 mins didn't move.
No other adult observed.

VISIT No.: 4

Date: June 15/16. Field Personnel: M Straus

Time: 1100 - 1300

Weather Conditions:	TEMP (°C)	WIND	CLOUD	PPT	PPT last 24 hrs
	20	2	100	Rain (light)	0

NOTES:

① No adult obs. → ← nest.
② Nest no longer visible due to leaves.

PAGE 1 OF 1

Print Name: MAS. (field notes author)

Quality Control: This form is complete ☑ & legible ☑

Signature: (field notes QA/QC personnel)

Stantec

Legend

- Raptor Study Area

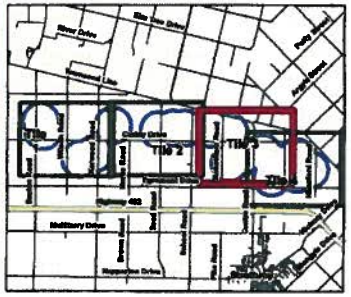
Project Components

- MET Tower
- Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody

DRAFT- For Field Use



Notes

1. Coordinate System: NAD 1983 UTM Zone 17N
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3. Orthoimagery © First Base Solutions, 2016. Airphoto Date- 2010

April 2016
160960710

Client/Project

Suncor Energy
Adelaide Wind Project

Figure No.
Tile- 3

Title
Field Map Book

W:\active\160960710\planning\MXD\Vanastalk\Final_Con_MapBook\Raptor\Raptor_Con_FieldMapbook_RaptorStudyArea_20160414.mxd
Revised: 2016-04-14 By: dbarney

Stantec Consulting Ltd.
1 – 70 Southgate Drive
Guelph, ON
Canada N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Raptor Behaviour Observational Survey Form

Project Number: 160961067 Project Name: Adelaide

Date: May 12/16 Field Personnel: MStraus

Weather Conditions:	TEMP (°C):	WIND:	CLOUD:	PPT:	PPT (in last 24 hrs):
	20	3	0	0	0

Station #: RTHA Nest 1 UTM: 17 447748 4765539.

Start Time: 930 End Time: 1015.

Raptor Species: RTHA If in kettle, indicate size:

Raptor #: 1 Age: X Adult (e.g. juvenile or adult)

Provide a description of each habitat unit within the observational area.

Habitat Unit #	Habitat Type (i.e. woodland, grassland, crop, wetland)	Description
A	Ag (W. wheat)	
B.	Woodlot	

Provide a line entry for each change in behavior or habitat.

Time	Behaviour (see definitions below) 1	2	3	4	5	Height* (m)	Habitat Unit # (from table above)	Notes
930					X	20	A	Adult on nest 930 - 10:15

** Height of blade sweep varies from project to project; check with project manager.*

1 – Thermal Soaring (kittling): Soaring in a circle within a thermal, without wingbeats
2 – Flapping: Flight powered by wingbeats
3 – Gliding: Flight in straight line without wingbeats
4 – Hovering: Hovering with or without wingbeats
5 – Perched: Perching

Pg. 1 of 1

Signature: MStraus (Field Personnel)

Quality Control: This form is complete ☐ & legible ☑.

Signature: (Project Manager)

Stantec Consulting Ltd.
1 – 70 Southgate Drive
Guelph, ON
Canada N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

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Raptor Behaviour Observational Survey Form

Project Number: 160961067
Project Name: Adelaide Wind Farm
Date: June 6, 2016
Field Personnel: Anna Corrigan

Weather Conditions:	TEMP (°C):	WIND:	CLOUD:	PPT:	PPT (in last 24 hrs):
	23-24°C	30Km/h	3%-60%	Ø	Thunderstorms

Station #: D
Start Time: 11:30
Raptor Species: RTHA
Raptor #: RTHA 1
Nest ID: D (RTHA1)

UTM: from parking spot: 17T, 0447864E, 4763351N
End Time: 13:30 am
If in kettle, indicate size: no kettle
Age: Adult (e.g. juvenile or adult)

Provide a description of each habitat unit within the observational area.

Habitat Unit #	Habitat Type (i.e. woodland, grassland, crop, wetland)	Description
1	Woodland (FOD)	Hickory, Oak and Ash
2	Winter Wheat (Ag)	Makes up majority of area north of FOD
3	Old Corn (Ag)	Located North of Winter Wheat

Provide a line entry for each change in behavior or habitat. Note: while looking for nest at 10:15, RTHA was seen gliding west, away from FOD

Time	Behaviour (see definitions below) 1	2	3	4	5	Height* (m)	Habitat Unit # (from table above)	Notes
11:35			X			50	1	Gliding West
11:43	X					50	1	Kitting over a 20 wide area, then went into FOD (nest here?) @ 11:49
12:08			X			75	1	Gliding East, then south out of view. → see map attached Used In
12:24	X					50	1	Over area where nest is thought to be
12:27			X			50	1	"
12:36		X				40	2	Flapping in the north direction
12:38	X					50	3	

** Height of blade sweep varies from project to project; check with project manager.*
1 – Thermal Soaring (kittling): Soaring in a circle within a thermal, without wingbeats
2 – Flapping: Flight powered by wingbeats
3 – Gliding: Flight in straight line without wingbeats
4 – Hovering: Hovering with or without wingbeats
5 – Perched: Perching

*while walking through FOD, no RTHA calls heard (adult nor juveniles)

Note: Nest was searched for from 9:30-11:30. Nest was not located.
- walked along forest edge, through forest, and used scope from afar. no luck

Pg. 1 of 2

Quality Control: This form is complete ☑ & legible ☑.

Signature: (Field Personnel)

Signature: Melissa Straus MAS (Project Manager)

REV: 2011-05-06 / FORM 036-a

Time	Behaviour (see definitions below)					Height* (m)	Habitat Unit # (from table above)	Notes
	1	2	3	4	5			
12:40		X				50	3	Moved North out of side

** Height of blade sweep varies from project to project; check with project manager.*

1 – Thermal Soaring (kittling): Soaring in a circle within a thermal, without wingbeats
2 – Flapping: Flight powered by wingbeats
3 – Gliding: Flight in straight line without wingbeats
4 – Hovering: Hovering with or without wingbeats
5 – Perched: Perching

Signature: _____ (Field Personnel)

Quality Control: This form is complete ☑ & legible ☑.

Signature: _____ (Project Manager)

Stantec

Legend

- Project Boundary
- Raptor Study Area

Project Components

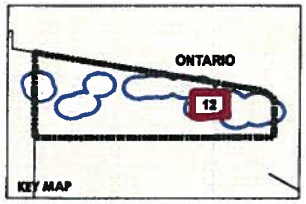
- MET Tower
- Turbine Location
- Proposed Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody

⊗ - nest

June 6, 2016



Notes

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February 2016
160985710

Client/Project

Suncor Energy
Adelaide Wind Project

Figure No.

Tile 12

Title

Supplemental Raptor Study Area (2016-2017) Mapbook

Stantec Consulting Ltd.
1 – 70 Southgate Drive
Guelph, ON
Canada N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Raptor Behaviour Observational Survey Form

Project Number: 160961067 Project Name: Adelaide

Date: June 15, 2016 Field Personnel: M. Straus

Weather Conditions:	TEMP (°C):	WIND:	CLOUD:	PPT:	PPT (in last 24 hrs):
	20°c	2	100	light Rain	Ø

Station #: Turbine 12 UTM: 17 447748 4763389

Start Time: 11:00Am End Time: 13:00

Raptor Species: RTHA nest If in kettle, indicate size: 0

Raptor #: Ø Age: Ø (e.g. juvenile or adult)

Provide a description of each habitat unit within the observational area.

Habitat Unit #	Habitat Type (i.e. woodland, grassland, crop, wetland)	Description
A	Wheat	
B	Wood lot	none observed.

Provide a line entry for each change in behavior or habitat.

Time	Behaviour (see definitions below) 1	2	3	4	5	Height* (m)	Habitat Unit # (from table above)	Notes

** Height of blade sweep varies from project to project; check with project manager.*

1 – Thermal Soaring (kittling): Soaring in a circle within a thermal, without wingbeats
2 – Flapping: Flight powered by wingbeats
3 – Gliding: Flight in straight line without wingbeats
4 – Hovering: Hovering with or without wingbeats
5 – Perched: Perching

Pg. 1 of 1

Signature: M Straus (Field Personnel)

Quality Control: This form is complete ☑ & legible ☑.

Signature: (Project Manager)

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1 – 70 Southgate Drive
Guelph, ON
Canada N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Raptor Behaviour Observational Survey Form

Project Number: 160961067
Project Name: Adelaide Windfarm
Date: June 20, 2016
Field Personnel: Brennan Obermayer

Weather Conditions:	TEMP (°C):	WIND:	CLOUD:	PPT:	PPT (in last 24 hrs):
	18 - 26	10-20 NW	50-100	0	0

Station #: Turbine 12
Start Time: 09:15
Raptor Species: RTHA
Raptor #: 1
UTM: /
End Time: 10:15
If in kettle, indicate size: /
Age: Adult (e.g. juvenile or adult)

Provide a description of each habitat unit within the observational area.

Habitat Unit #	Habitat Type (i.e. woodland, grassland, crop, wetland)	Description
1	Woodland / Nest	Nest area
2	Agriculture.	~~Seen~~

Provide a line entry for each change in behavior or habitat.

Time	Behaviour (see definitions below) 1	2	3	4	5	Height* (m)	Habitat Unit # (from table above)	Notes
09:15								No nests visible, no RTHA seen
10:12	X					40-60	2	Seen for 4 min (adult)
10:26	X					40-50	2	adult seen for 5 min.
10:40			X			30	2	saw briefly over tree line (adult)
11:00	X					40-50	2	Adult seen for 2 min
11:15								No RTHA currently observed

1
2
3
4

** Height of blade sweep varies from project to project; check with project manager.*
1 – Thermal Soaring (kittling): Soaring in a circle within a thermal, without wingbeats
2 – Flapping: Flight powered by wingbeats
3 – Gliding: Flight in straight line without wingbeats
4 – Hovering: Hovering with or without wingbeats
5 – Perched: Perching

Pg. 1 of 1

Signature: (Field Personnel)

Quality Control: This form is complete ☑ & legible ☑.
Signature: (Project Manager)

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Revised: 2016-02-10 By: mkraus

Stantec

June 20, 2016
Brenna Obermayer

Legend

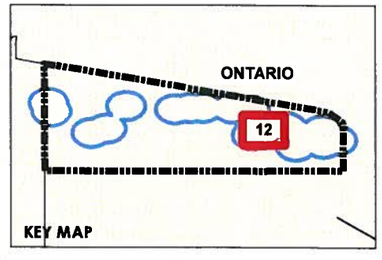
- Project Boundary
- Raptor Study Area

Project Components

- MET Tower
- Turbine Location
- Proposed Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody



Notes

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3. Orthographic Imagery provided by Suncore, 2011. Imagery taken in Spring 2010.

February 2016
160960710

Client/Project

Suncor Energy
Adelaide Wind Project

Figure No.

Tile 12

Title

Supplemental Raptor Study Area (2016-2017) Mapbook

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1 – 70 Southgate Drive
Guelph, ON
Canada N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Stantec

Raptor Behaviour Observational Survey Form

Project Number: 160960 1067

Project Name: Adelaide ~~1067~~

Date: June 27, 2016

Field Personnel: Brennan Obermayer

Weather Conditions:	TEMP (°C):	WIND:	CLOUD:	PPT:	PPT (in last 24 hrs):
	28 - 31	S-15 W	10 - 5	0	Little rain

Station #: T12

UTM: /

Start Time: 09:58

End Time: 11:58

Raptor Species: RTHA

If in kettle, indicate size: /

Raptor #: 0

Age: 0

(e.g. juvenile or adult)

Provide a description of each habitat unit within the observational area.

Habitat Unit #	Habitat Type (i.e. woodland, grassland, crop, wetland)	Description
2	woodland/rest	rest area
2	Agriculture	

Provide a line entry for each change in behavior or habitat.

Time	Behaviour (see definitions below) 1	2	3	4	5	Height* (m)	Habitat Unit # (from table above)	Notes
09:58	—							No RTHA present
11:58	—							No RTHA observed

** Height of blade sweep varies from project to project; check with project manager.*

1 – Thermal Soaring (kittling): Soaring in a circle within a thermal, without wingbeats
2 – Flapping: Flight powered by wingbeats
3 – Gliding: Flight in straight line without wingbeats
4 – Hovering: Hovering with or without wingbeats
5 – Perched: Perching

Signature: _____ (Field Personnel)

Quality Control: This form is complete ☐ & legible ☐.

Signature: _____ (Project Manager)

Stantec Consulting Ltd.
1 – 70 Southgate Drive
Guelph, ON
Canada N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Stantec

Raptor Behaviour Observational Survey Form

Project Number: 160961067
Project Name: Adelaide
Date: July 4, 2016
Field Personnel: Brennan Obermayer

Weather Conditions:	TEMP (°C):	WIND:	CLOUD:	PPT:	PPT (in last 24 hrs):
	18 - 24	5-20 SE	0-5	0	0

Station #: T12
Start Time: 08:40
Raptor Species: RTHA
Raptor #: 1

UTM: n/a
End Time: 10:40
If in kettle, indicate size: n/a
Age: Adult
(e.g. juvenile or adult)

Provide a description of each habitat unit within the observational area.

Habitat Unit #	Habitat Type (i.e. woodland, grassland, crop, wetland)	Description
1	woodland / nest area	
2	Agriculture	

Provide a line entry for each change in behavior or habitat.

Time	Behaviour (see definitions below) 1	2	3	4	5	Height* (m)	Habitat Unit # (from table above)	Notes
8:40								No RTHA observed
09:52	X					30	2	one adult soaring, went
								below treeline around
								nest area.
10:40								No ~~RTHA~~ currently observed.
								RTHA

* *Height of blade sweep varies from project to project; check with project manager.*
1 – Thermal Soaring (kitting): Soaring in a circle within a thermal, without wingbeats
2 – Flapping: Flight powered by wingbeats
3 – Gliding: Flight in straight line without wingbeats
4 – Hovering: Hovering with or without wingbeats
5 – Perched: Perching

Signature: _____ (Field Personnel)

Quality Control: This form is complete ☑ & legible ☑.
Signature: _____ (Project Manager)

Stantec

Legend

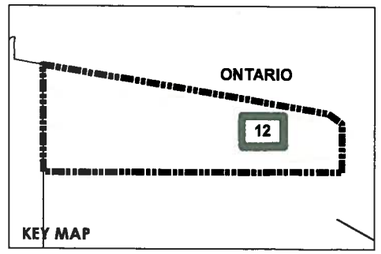
- Project Boundary
- Raptor Study Area

Project Components

- MET Tower
- Turbine Location
- Proposed Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody



Notes

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February 2016
160960710

Client/Project

Suncor Energy
Adelaide Wind Project

Figure No.

Tile 12

Title

Supplemental Raptor Study Area (2016-2017) Mapbook

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Revised: 2016-02-10 By: mkraus

Stantec Consulting Ltd.
1 – 70 Southgate Drive
Guelph, ON
Canada N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

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Raptor Behaviour Observational Survey Form

Project Number: 160961067
Project Name: Adelaide Wind Farm
Date: July 11, 2016
Field Personnel: Anna Corrigan

Weather Conditions:	TEMP (°C):	WIND:	CLOUD:	PPT:	PPT (in last 24 hrs):
	19 - 25 °C	1-2	40-70%	0	0

Station #: D
Start Time: 8:53am
Raptor Species: RTHA
Raptor #: RTHA 1
Nest ID: D

UTM: 17t, 044 7864E, 4763351 N (From parking spot)
End Time: 10:53am
If in kettle, indicate size: No Kettle
Age: Adult
(e.g. juvenile or adult)

Provide a description of each habitat unit within the observational area.

Habitat Unit #	Habitat Type (i.e. woodland, grassland, crop, wetland)	Description
1	Woodland (where nest is)	
2	agriculture	

Provide a line entry for each change in behavior or habitat.

Time	Behaviour (see definitions below) 1	2	3	4	5	Height* (m)	Habitat Unit # (from table above)	Notes
853								Start monitoring for RTHA
10:53								End monitoring for RTHA

** Height of blade sweep varies from project to project; check with project manager.*
1 – Thermal Soaring (kittling): Soaring in a circle within a thermal, without wingbeats
2 – Flapping: Flight powered by wingbeats
3 – Gliding: Flight in straight line without wingbeats
4 – Hovering: Hovering with or without wingbeats
5 – Perched: Perching

Signature: _____ (Field Personnel)

Quality Control: This form is complete ☑ & legible ☑.
Signature: _____ (Project Manager)

Stantec

Legend

- Project Boundary
- Raptor Study Area

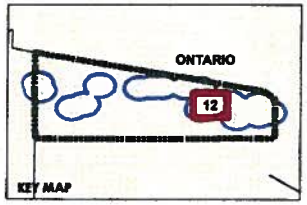
Project Components

- MET Tower
- Turbine Location
- Proposed Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody

no RTHA seen on July 11/16



Notes

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February 2016
160960710

Client/Project

Suncor Energy
Adelaide Wind Project

Figure No.

Tile 12

Title

Supplemental Raptor Study Area (2016-2017) Mapbook

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Revised: 2016-05-10 By: mbooth

Stantec Consulting Ltd.
1 – 70 Southgate Drive
Guelph, ON
Canada N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Raptor Behaviour Observational Survey Form

Project Number: 160961067
Project Name: Adelaide Wind Farm
Date: July 21, 2016
Field Personnel: Anna Corrigan

Weather Conditions:	TEMP (°C):	WIND:	CLOUD:	PPT:	PPT (in last 24 hrs):
	19 – 25°C	10-12 km/h; S	10%	Ø	Ø

Station #: D
UTM: 17T, 0447864 E, 4763351 N → from parking spot
Start Time: 7:51am
End Time: 9:51am
Raptor Species: RTHA
If in kettle, indicate size: n/a
Raptor #: RTH1
Age: Adult (e.g. juvenile or adult)
Nest ID- D

Provide a description of each habitat unit within the observational area.

Habitat Unit #	Habitat Type (i.e. woodland, grassland, crop, wetland)	Description
1	FOD (where nest is)	South of turbine 12
2	Agriculture	agricultural fields surrounding FOD feature

Provide a line entry for each change in behavior or habitat.

Time	Behaviour (see definitions below) 1	2	3	4	5	Height* (m)	Habitat Unit # (from table above)	Notes
7:51am	* Start of monitoring						*	
9:51am	* end of monitoring; no RTHA seen						*	

* *Height of blade sweep varies from project to project; check with project manager.*
1 – Thermal Soaring (kittling): Soaring in a circle within a thermal, without wingbeats
2 – Flapping: Flight powered by wingbeats
3 – Gliding: Flight in straight line without wingbeats
4 – Hovering: Hovering with or without wingbeats
5 – Perched: Perching

Pg. 1 of 1

Signature: (Field Personnel)

Quality Control: This form is complete ☑ & legible ☑.
Signature: Melissa Strauss, MAS (Project Manager)

Stantec

Legend

- Project Boundary
- Raptor Study Area

Project Components

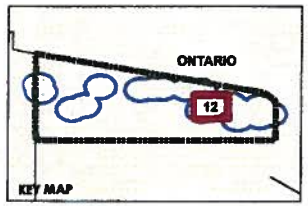
- MET Tower
- Turbine Location
- Proposed Turbine Location
- Access Road
- Collector Line
- Substation Constructible Area

Existing Features

- Expressway / Highway
- Road
- Watercourse
- Constructed Drain
- Waterbody

no RTHA Secon

July 21, 2016



Notes

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February 2016
160940710

Client/Project

Suncor Energy
Adelaide Wind Project

Figure No.

Tile 12

Title

Supplemental Raptor Study Area (2016-2017) Mapbook

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Revised: 2016-02-10 By: mbouk

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1 – 70 Southgate Drive
Guelph, ON
Canada N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Raptor Behaviour Observational Survey Form

Project Number: 160961067
Project Name: Adelaide
Date: July 29/16
Field Personnel: Melissa Straus.

Weather Conditions:	TEMP (°C):	WIND:	CLOUD:	PPT:	PPT (in last 24 hrs):
	20 - 25	1	50	0	0

Station #: Turbine 12
Start Time: 08:05
Raptor Species: RTHA - nest
Raptor #: 1

UTM: 17T 447865 · 4763367
End Time: 10:05.
If in kettle, indicate size: none
Age: none
(e.g. juvenile or adult)

Provide a description of each habitat unit within the observational area.

Habitat Unit #	Habitat Type (i.e. woodland, grassland, crop, wetland)	Description
1	Cut wheat ⟷	Crop
2	Woodlot	FOD where nest is/was (no longer visible)

Provide a line entry for each change in behavior or habitat.

Incident #	Time	Behaviour (see definitions below) 1	2	3	4	5	Height* (m)	Habitat Unit # (from table above)	Notes
1	945	✓					@ turbine	1, 2	moving east (2 left) ⇒ came back (see below)
2	955	✓					@ turbine	2	Continued to circle (same as # 1 TUVU @ 945)
3	1005	✓					@ +	2	1 more TUVU joined (3 total)

* *Height of blade sweep varies from project to project; check with project manager.*
1 – Thermal Soaring (kittling): Soaring in a circle within a thermal, without wingbeats
2 – Flapping: Flight powered by wingbeats
3 – Gliding: Flight in straight line without wingbeats
4 – Hovering: Hovering with or without wingbeats
5 – Perched: Perching

Signature: M Straus
(Field Personnel)

Quality Control: This form is complete ☑ & legible ☑.
Signature:
(Project Manager)

APPENDIX H: NOTIFICATION

Stantec

CONFIRMATION OF REGISTRATION

Form Name:	Notice of Possession
Date Registration Filed:	05/03/2016
Confirmation ID:	M-101-9128016276
Version Number:	001
Update Date:	

STANTEC CONSULTING LTD.

70 Southgate DR , SUITE 1
Guelph, ON N1G4H5

Dear Sir/Madam,

You have registered under section 2 or 3.2 of Ontario Regulation 666/98 under the *Fish and Wildlife Conservation Act, 1997* and/or subsection 23.15(6) of Ontario Regulation 242/08 under the *Endangered Species Act, 2007*.

Your Notice of Possession form has been received by the Ministry of Natural Resources for the possession of the following:

Species Name:	Red-tailed Hawk
Condition:	Whole
Number Acquired:	1

You may be required to show this record for certain activities.

Please refer to Ontario Regulations 666/98 and/or 242/08 for requirements that apply to your activity.

Any questions related to this registration and/or the Natural Resources Registry should be directed to:

Registry and Approval Services Centre
Ministry of Natural Resources
300 Water Street
Peterborough, ON, K9J8M5
Toll-free: 1-855-613-4256
E-mail: mnr.rasc@ontario.ca

Ontario

CONFIRMATION OF REGISTRATION

Form Name:	Notice of Possession
Date Registration Filed:	05/16/2016
Confirmation ID:	M-101-4129344404
Version Number:	001
Update Date:	

STANTEC CONSULTING LTD.

70 Southgate DR , SUITE 1
Guelph, ON N1G4H5

Dear Sir/Madam,

You have registered under section 2 or 3.2 of Ontario Regulation 666/98 under the *Fish and Wildlife Conservation Act, 1997* and/or subsection 23.15(6) of Ontario Regulation 242/08 under the *Endangered Species Act, 2007*.

Your Notice of Possession form has been received by the Ministry of Natural Resources for the possession of the following:

Species Name:	Bobolink
Condition:	Part
Number Acquired:	1

You may be required to show this record for certain activities.

Please refer to Ontario Regulations 666/98 and/or 242/08 for requirements that apply to your activity.

Any questions related to this registration and/or the Natural Resources Registry should be directed to:

Registry and Approval Services Centre
Ministry of Natural Resources
300 Water Street
Peterborough, ON, K9J8M5
Toll-free: 1-855-613-4256
E-mail: mnr.rasc@ontario.ca

CONFIRMATION OF REGISTRATION

Form Name:	Notice of Possession
Date Registration Filed:	09/21/2016
Confirmation ID:	M-101-3150642969
Version Number:	001
Update Date:	

STANTEC CONSULTING LTD.

70 Southgate DR , SUITE 1
Guelph, ON N1G4H5

Dear Sir/Madam,

You have registered under section 2 or 3.2 of Ontario Regulation 666/98 under the *Fish and Wildlife Conservation Act, 1997* and/or subsection 23.15(6) of Ontario Regulation 242/08 under the *Endangered Species Act, 2007*.

Your Notice of Possession form has been received by the Ministry of Natural Resources for the possession of the following:

Species Name:	Turkey Vulture
Condition:	Part
Number Acquired:	1

You may be required to show this record for certain activities.

Please refer to Ontario Regulations 666/98 and/or 242/08 for requirements that apply to your activity.

Any questions related to this registration and/or the Natural Resources Registry should be directed to:

Registry and Approval Services Centre
Ministry of Natural Resources
300 Water Street
Peterborough, ON, K9J8M5
Toll-free: 1-855-613-4256
E-mail: mnr.rasc@ontario.ca

CONFIRMATION OF REGISTRATION

Form Name:	Notice of Possession
Date Registration Filed:	09/26/2016
Confirmation ID:	M-101-6151074029
Version Number:	001
Update Date:	

STANTEC CONSULTING LTD.

70 Southgate DR , SUITE 1
Guelph, ON N1G4H5

Dear Sir/Madam,

You have registered under section 2 or 3.2 of Ontario Regulation 666/98 under the *Fish and Wildlife Conservation Act, 1997* and/or subsection 23.15(6) of Ontario Regulation 242/08 under the *Endangered Species Act, 2007*.

Your Notice of Possession form has been received by the Ministry of Natural Resources for the possession of the following:

Species Name:	Red-tailed Hawk
Condition:	Part
Number Acquired:	1

You may be required to show this record for certain activities.

Please refer to Ontario Regulations 666/98 and/or 242/08 for requirements that apply to your activity.

Any questions related to this registration and/or the Natural Resources Registry should be directed to:

Registry and Approval Services Centre
Ministry of Natural Resources
300 Water Street
Peterborough, ON, K9J8M5
Toll-free: 1-855-613-4256
E-mail: mnr.rasc@ontario.ca

CONFIRMATION OF REGISTRATION

Form Name:	Notice of Possession
Date Registration Filed:	09/29/2016
Confirmation ID:	M-101-9151424359
Version Number:	002
Update Date:	09/30/2016

STANTEC CONSULTING LTD.

70 Southgate DR , SUITE 1
Guelph, ON N1G4H5

Dear Sir/Madam,

You have registered under section 2 or 3.2 of Ontario Regulation 666/98 under the *Fish and Wildlife Conservation Act, 1997* and/or subsection 23.15(6) of Ontario Regulation 242/08 under the *Endangered Species Act, 2007*.

Your Notice of Possession form has been received by the Ministry of Natural Resources for the possession of the following:

Species Name:	Turkey Vulture
Condition:	Whole
Number Acquired:	1

You may be required to show this record for certain activities.

Please refer to Ontario Regulations 666/98 and/or 242/08 for requirements that apply to your activity.

Any questions related to this registration and/or the Natural Resources Registry should be directed to:

Registry and Approval Services Centre
Ministry of Natural Resources
300 Water Street
Peterborough, ON, K9J8M5
Toll-free: 1-855-613-4256
E-mail: mnr.rasc@ontario.ca