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



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File No. 160961067 February 17, 2017

Sign-off Sheet

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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 18, 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 110, 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

С	Corrected number of birds or bats
С	Raw number of birds or bats
Cl	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
Т	Turbine



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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 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.



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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 15), 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



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- 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.



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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).



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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



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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).



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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.



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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 ٠
- UTM
- direction and distance from the nearest turbine
- marker type used ٠
- 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)



2.4

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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:

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

where:

Seo is the Overall Searcher Efficiency Se1, 2, 3... are Individual Searcher Efficiency Ratings

 $N_{1,2,3...}$ 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



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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



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

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

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:

С

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

is the corrected number of bird or bat fatalities

where:

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.



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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).



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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.



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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.



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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.



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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 15 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**.



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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.



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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.



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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.



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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.



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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).



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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).



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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).



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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



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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 110), 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.



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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 causalities 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).



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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, 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**). 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).



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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.



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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.



Summary and Recommendations February 17, 2017

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 15 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.



Summary and Recommendations February 17, 2017

In accordance with REA Section 110, 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 111 and 112 for the second year of monitoring at the Adelaide Wind Power Project.



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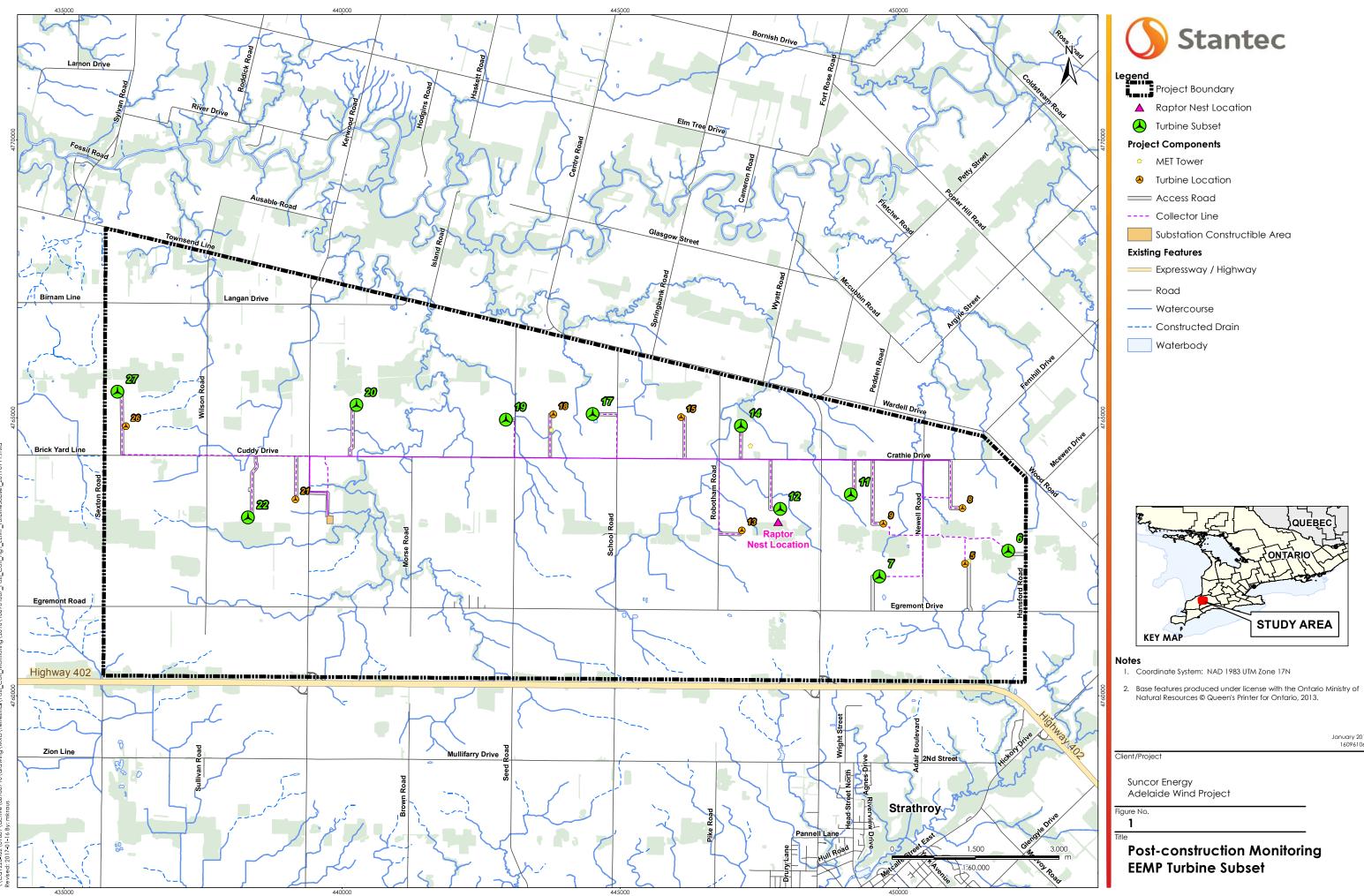
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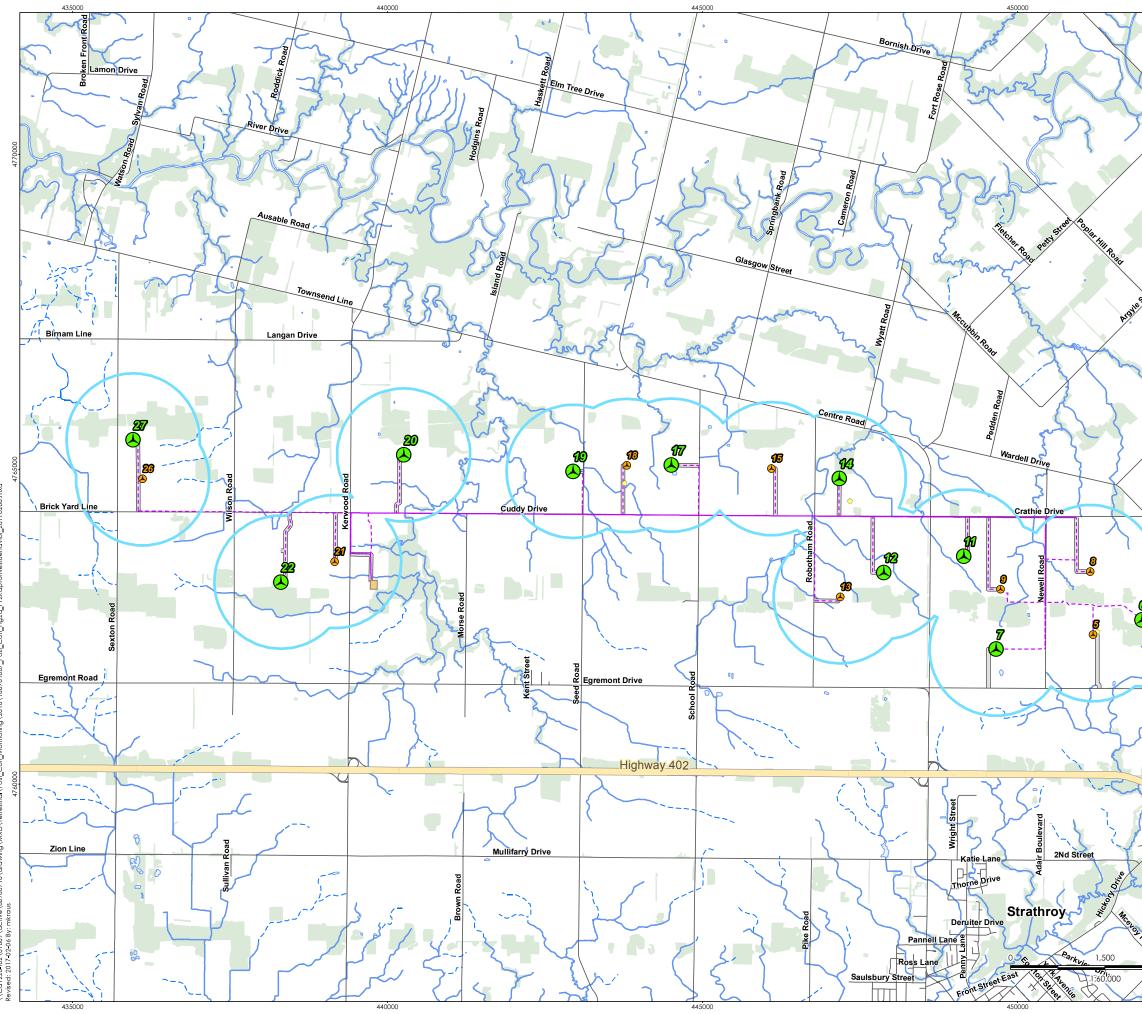
APPENDIX A FIGURES

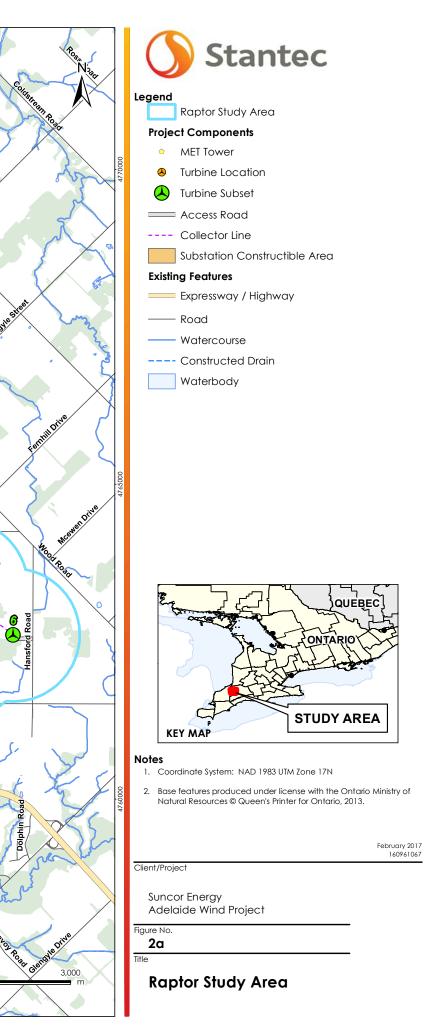


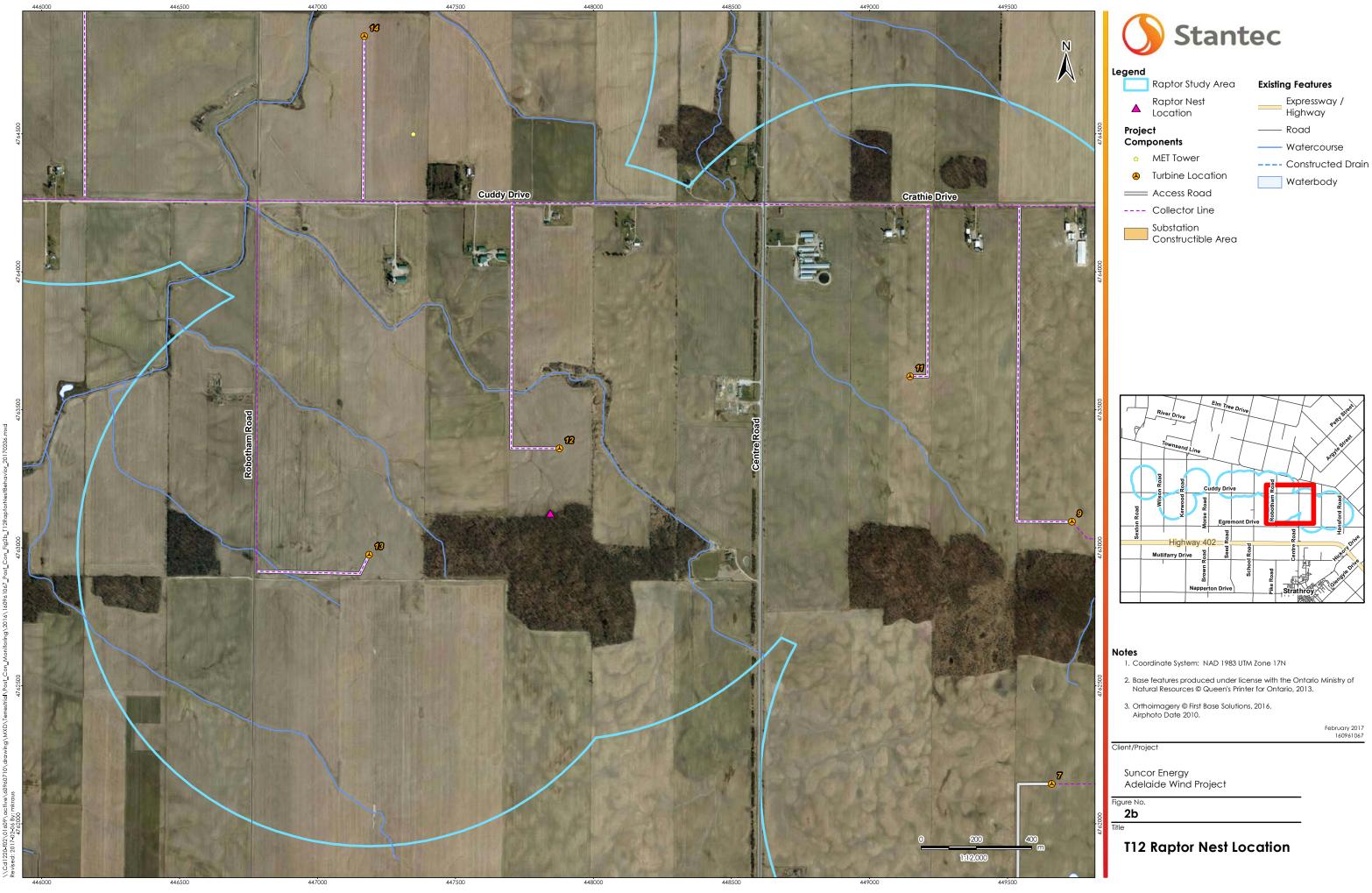


Post-construction Monitoring

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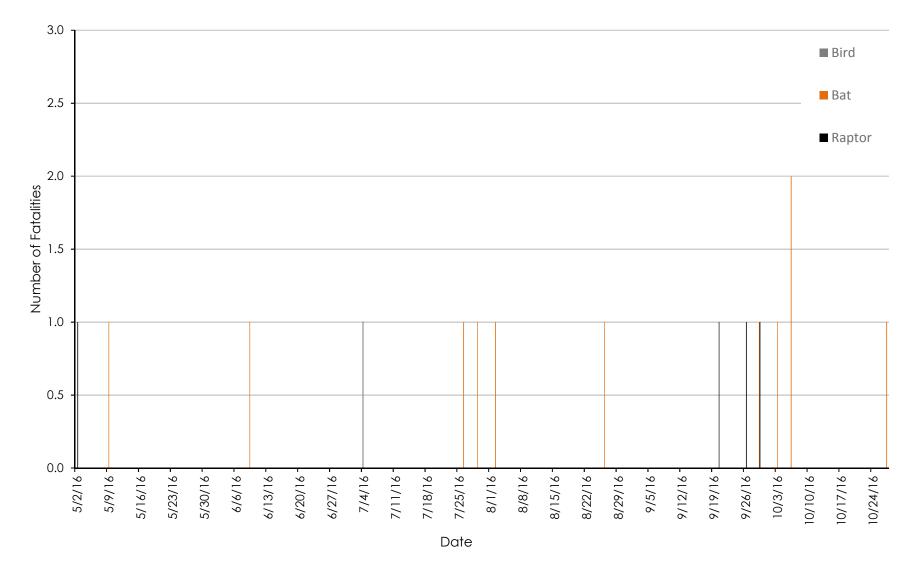


Figure 3: Fatalities at the Adelaide Wind Power Project by Date, 2016



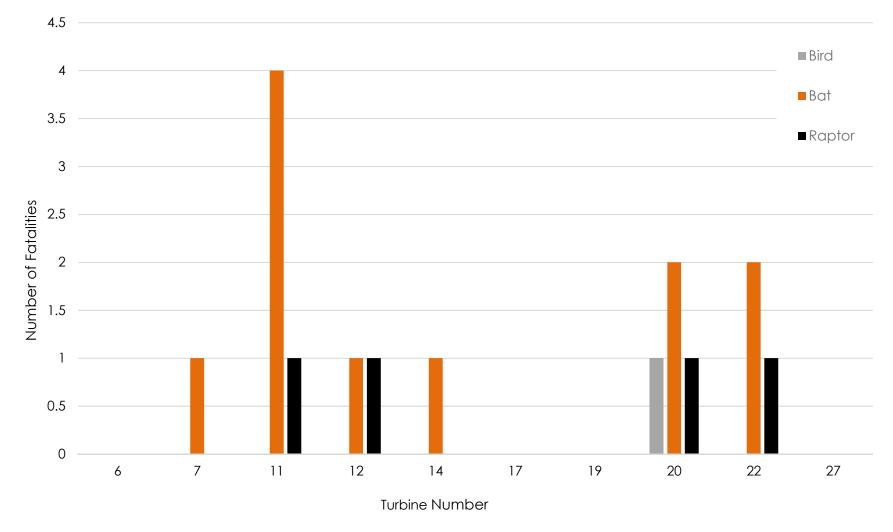
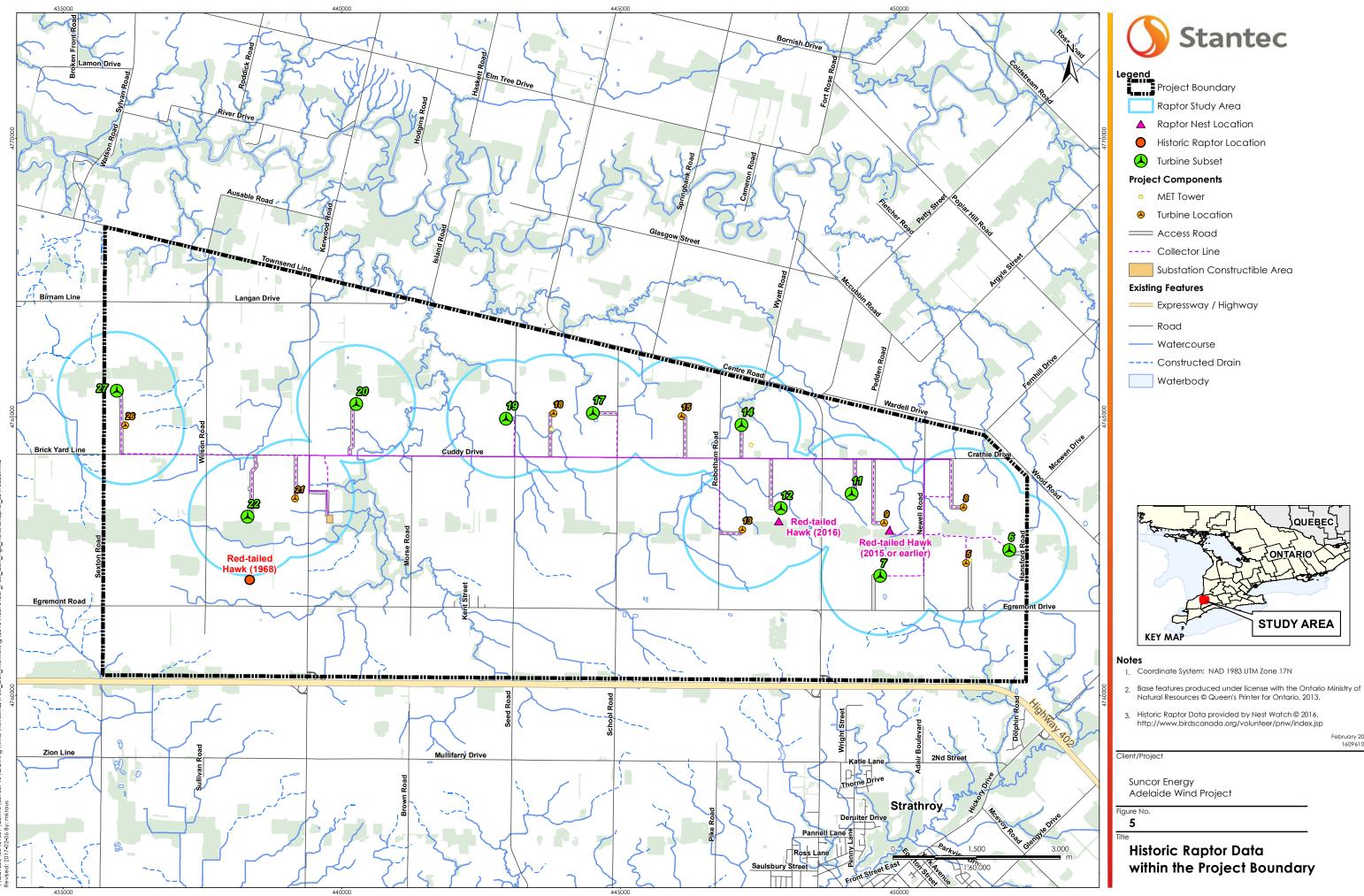
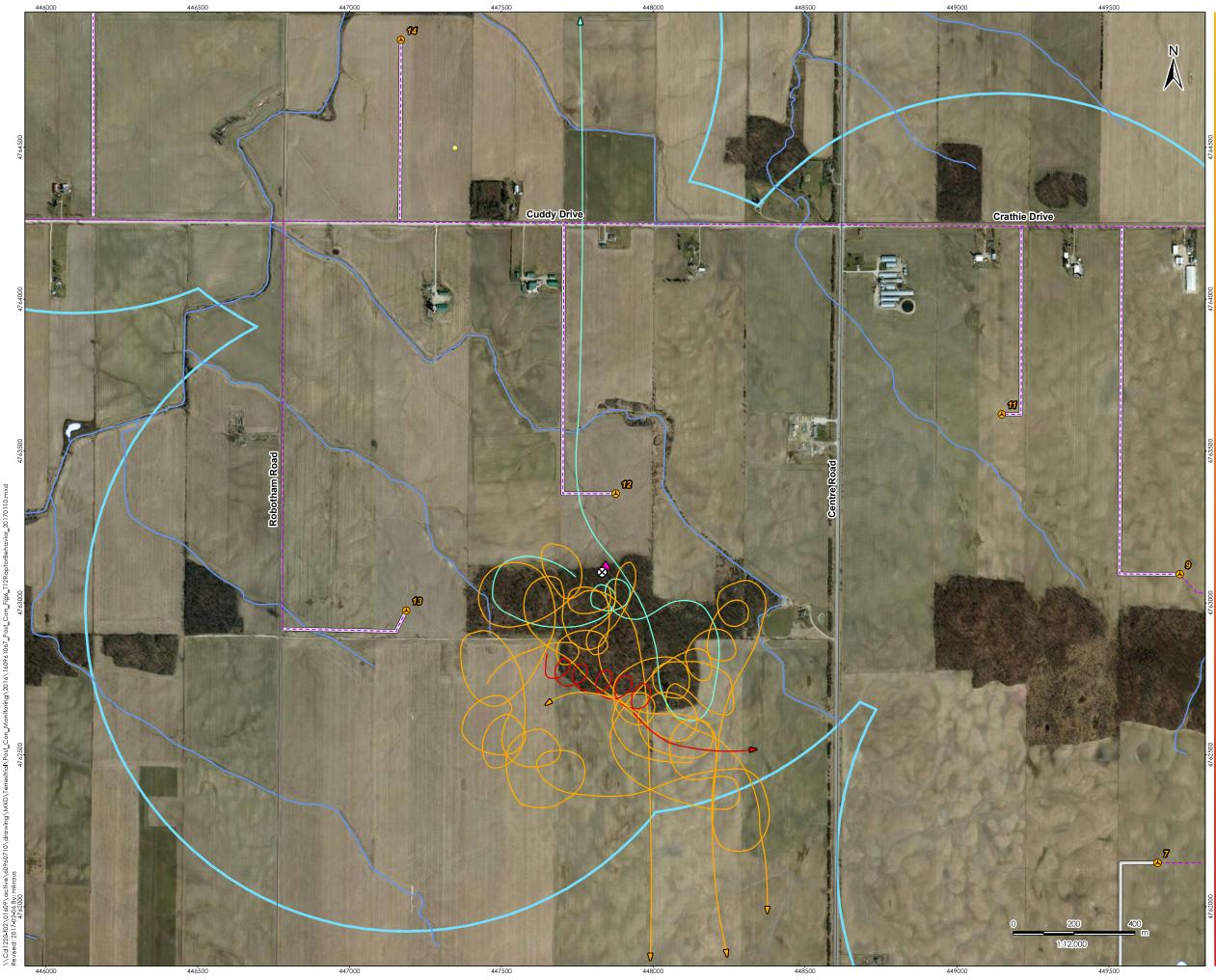


Figure 4: Fatalities at the Adelaide Wind Power Project by Turbine, 2016



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Stantec						
D 		Existing Features Expressway / Highway Road Watercourse Constructed Drain Waterbody				
• &	MET Tower Turbine Location Access Road Collector Line Substation Constructible Area					
Sexton Road	River Drive Townsend Line provide Cuddy Drive Provide Cuddy Drive Pr	The second secon				

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.

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Client/Project

Suncor Energy Adelaide Wind Project

Figure No. 6

Title

T12 Raptor Behavioral Monitoring Results

APPENDIX B ENVIRONMENTAL EFFECTS MONITORING PLAN



Ministry of Natural Resources Confirmation Letter Dated: July 31, 2012 Ministry of
Natural ResourcesMinistère des
Richesses naturellesRenewable Energy Operations TeamP.O. Box 7000300 Water Street
4th Floor, South TowerPeterborough, Ontario K9J 8M5



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,

meion

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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

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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:

% 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).

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

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 = $\underline{n_{visit1} + n_{visit2} + n_{visit3} + n_{visit4}}_{visit0}$ where $n_{visit0} + n_{visit1} + n_{visit2} + n_{visit3}$

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

 \mathbf{n}_{visit0} is the total number of carcasses placed

nvisit1 - nvisit4 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:

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

C is the corrected number of bird or bat fatalities

c is the number of carcasses found

 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

 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 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 =

number of test carcasses found number of test carcasses placed – 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:	Seo	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
	Т	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 "flyovers". 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 "flyovers". 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 43^{rd} and 47^{th} parallels), the first survey window is generally recognized as April 15 – 30, or when night-time air temperatures are consistently above 5°C. The second survey window is generally recognized as May 15 – 30, or when night-time air temperatures are consistently above 10°C. The third survey window is generally recognized as June 15 – 30, or when night-time air temperatures are consistently above 17°C. 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 5°C. The second survey window is generally recognized as May 15 - 30, or when night-time air temperatures are consistently above 10° C. The third survey window is generally recognized as June 15 - 30, or when night-time air temperatures are consistently above 17° C. 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

Vince Deschamps Senior Environmental Planner

Mark Kozák

Senior Project Manager

2012-07-27_adelaide_eemp_rev a_fnl

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Stantec ADELAIDE WIND PROJECT

NATURAL HERITAGE ASSESSMENT AND ENVIRONMENTAL IMPACT STUDY

		Performance Objective						
Potential Negative Effect	Mitigation Strategy		Methods	Location	Frequency	Rationale	Reporting	Contingency Measures
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 Bi	rds		1	1	1	1	1	•
Disturbance to waterfowl	Post-construction Disturbance	MNR, along with the proponent and	Point count survey and area	In Features 6 or 20, if	Three times during the spring breeding season	Breeding pair density	Annual Report will be submitted	Should performance objectives

Stantec ADELAIDE WIND PROJECT NATURAL HERITAGE ASSESSMENT AND ENVIRONMENTAL IMPACT STUDY

		lan for Operation of the Suncor Adel			Monitoring Plan			
Potential Negative Effect	Mitigation Strategy	Performance Objective	Methods	Location	Frequency	Rationale	Reporting	Contingency Measures
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 preeding bird species during pperation (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.		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

Stantec ADELAIDE WIND PROJECT NATURAL HERITAGE ASSESSMENT AND ENVIRONMENTAL IMPACT STUDY

					Monitoring Plan			
Potential Negative Effect	Mitigation Strategy	Performance Objective	Methods	Location	Frequency	Rationale	Reporting	Contingency Measures
	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 agencie 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 areasensitive breeding bird habitat. Mitigation techniques may includ (but are not limited to) operational controls, such as periodic shutdown and/or blade feathering. Results will be reviewed collectively by the proponent, MNR and other relevant agencie to determine if and when additional monitoring and/or mitigation is required. The best available science and information

Stantec ADELAIDE WIND PROJECT

NATURAL HERITAGE ASSESSMENT AND ENVIRONMENTAL IMPACT STUDY

Detential Negative Effect	Mitigation Officiany	Deufeumence Objective			Monitoring Plan			Continger
Potential Negative Effect	Mitigation Strategy	Performance Objective	Methods	Location	Frequency	Rationale	Reporting	Contingency Measures
isturbance to shrub/early accessional breeding bird becies during operation eature 13)	Canada Warbler. Canada Warbler. 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,	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 be considered when determining appropriate mitigation. MNR will be consulted on contingency measures to be implemented. Should performance objectives not be met: Compare declines to population trends noted through province or continent-wide breeding bi surveys develop additional studies determine extent of disturbance effect investigate habitat management means to increase breeding density Additional monitoring and/or mitigation may be required whet 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 blad feathering. Results will be reviewed collectively by the proponent, MNR and other relevant agencies to determine
isturbance Monitoring for Ar isturbance to amphibian oodland breeding habitat	Eastern Towhee and Willow Flycatcher; and, Special Concern species including Yellow-breasted Chat and Golden-winged Warbler. mphibians Post-construction Disturbance Monitoring Program	MNR, along with the proponent and other relevant agencies, will	Call count surveys using pre- construction methods, based	2 count stations (one within 120m of project	Once in each of April 1- 15, May 1-15 and June	Presence of calling amphibians in	Report will be submitted to	and when additional monitoring and/or mitigation is required. best available science and information should be consider when determining appropriate mitigation. MNR will be consulted on contingency measures to be implemented. Where post-construction monitoring identifies ecologica
ring operation (Features 6 d 20)	The breeding density of woodland species (combined	collectively review the results of the post-construction monitoring to determine if an ecologically	on Marsh Monitoring Program protocol.	location and one more than 120m) in each of Features 6	1-15, for one year post- construction.	significant wildlife habitat (with consideration for pre-	MNR with the following anticipated date:	significant disturbance effects t amphibians the proponent, MI and other relevant agencies wi

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Stantec ADELAIDE WIND PROJECT NATURAL HERITAGE ASSESSMENT AND ENVIRONMENTAL IMPACT STUDY

	J	an for Operation of the Suncor Adel			Monitoring Plan			
Potential Negative Effect	Mitigation Strategy	Performance Objective	Methods	Location	Frequency	Rationale	Reporting	Contingency Measures
	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.

ADELAIDE WIND POWER PROJECT: YEAR 2 POST-CONSTRUCTION WILDLIFE MONITORING REPORT (2016)

APPENDIX C: RENEWAL ENERGY APPROVAL





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

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

You have applied in accordance with Section 47.4 of the <u>Environmental Protection Act</u> 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:

- "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;
- "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_{ev};
- 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;
- "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	Grab
	spaced having a minimum two (2) of these samples	
	taken within 48 hours after a 10mm rainfall event.	

- (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

- 11. 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

111. 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.

- 112. 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

Transformer	1/1 Octave Band Centre Frequency (Hz)							
Substation	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

Table B2: Maximum Sound Power Spectrum of Transformer Substation

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 <u>Environmental Protection Act</u>, 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 <u>Environmental Bill of Rights, 1993</u>, the Environmental Commissioner will place notice of your request for a hearing on the Environmental Registry.

Section 142 of the <u>Environmental Protection Act</u> 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 <u>each</u> 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*		The Environmental Commissioner		The Director
Environmental Review Tribunal		1075 Bay Street, 6th Floor		Section 47.5, Environmental Protection Act
655 Bay Street, 15th Floor		Suite 605		Ministry of the Environment
Toronto, Ontario	AND	Toronto, Ontario	<u>AND</u>	2 St. Clair Avenue West, Floor 12A
M5G 1E5		M5S 2B1		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 <u>Environmental Protection Act</u>, 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



Adelaide raptor protocol approved!

Sent from my iPhone

Begin forwarded message:

From: "Valliant, Emma (MNRF)" <<u>Emma.Valliant@ontario.ca</u>> Date: June 23, 2016 at 1:34:00 PM EDT To: "Taylor, Andrew" <<u>andrew.taylor@stantec.com</u>> Cc: "Valliant, Emma (MNRF)" <<u>Emma.Valliant@ontario.ca</u>>, "Beal, Jim (MNRF)" <<u>jim.beal@ontario.ca</u>> Subject: RE: Stantec FTP Confirmation - ADELAIDE 2015 ANNUAL

Hi Andrew, All that sounds good! Thanks. Emma Emma Valliant A/Regional Planning Ecologist 705-755-5393

POST-CON REPORT

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 potes and amail indicate that this was found during the monthly raptor

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, I've uploaded the Adelaide Report to the ftp site below. Please let me know if you are able to access it this time. If this does not work, I could send the report piecemeal in a few emails. Thanks, Andrew From: <u>CORPFTP@temp.stantec.com</u> [mailto:CORPFTP@temp.stantec.com] Sent: Monday, May 16, 2016 9:03 AM **To:** Taylor, Andrew Subject: Stantec FTP Confirmation - ADELAIDE 2015 ANNUAL POST-CON REPORT Your request has been successfully created.

Please use the automatic login link below to access your site. You have also been provided a manual link, username and password in case your computer disables the automatic login link.

<u>NOTE</u>: FTP Sites are not included in Stantec daily backups and are only intended to be used as a means of transferring large files between offices, clients, etc.

Automatic Login

FTP site link: http://s0530070247:7579679@ftptmp.stantec.com

By clicking on the link above (or pasting the link into Windows Explorer) you will be automatically logged into your FTP site.

Manual Login

FTP link: <u>ftp://ftptmp.stantec.com</u> Login name: s0530070247 Password: 7579679 Disk Quota: 2GB Expiry Date: 5/30/2016

If your site has not expired and you require a onetime 2 week extension, please contact the <u>IT</u> <u>Service Center</u>.

If you require more than 2 weeks, please request an FTP Project Directory. Information on the FTP Project Directory request procedure is posted in the <u>StanNet Help Center</u>.

DISCLAIMER:

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Adelaide Wind Power Project:

Addendum to the Raptor Monitoring Plan



Prepared for: Suncor Adelaide Wind Limited Partnership 150 6th Avenue SW Calgary, AB T2P 3E3

Prepared by: Stantec Consulting Ltd. 70 Southgate Drive, Suite 1 Guelph ON N1E 7B8

File No. 160961067 February 17, 2017

Sign-off Sheet

This document entitled Adelaide Wind Power Project: Addendum to the Raptor Monitoring Plan was prepared by Stantec Consulting Ltd. ("Stantec") for the account of Suncor Energy Products Inc. (the "Client"). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec's professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

Melissa Straus, M.Sc. **Terrestrial Ecologist**

Indrew Ja Reviewed by

Andrew Taylor, B.Sc. Senior Ecologist

Reviewed by

Nicole Kopysh, B.E.S. Project Manager



ADDENDUM TO THE RAPTOR MONITORING PLAN

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ADDENDUM TO THE RAPTOR MONITORING PLAN

Abbreviations

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



ADDENDUM TO THE RAPTOR MONITORING PLAN

Introduction February 17, 2017

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:
 - o background records review
 - o habitat mapping
 - o behaviour surveys at active nests (weekly, May-July)
 - o 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.



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 110), 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.



ADDENDUM TO THE RAPTOR MONITORING PLAN

Methods February 17, 2017

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.



ADDENDUM TO THE RAPTOR MONITORING PLAN

Reporting and Analysis February 17, 2017

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.



ADDENDUM TO THE RAPTOR MONITORING PLAN

Summary February 17, 2017

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 18, 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.



ADDENDUM TO THE RAPTOR MONITORING PLAN

References February 17, 2017

5.0 **REFERENCES**

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- Stantec Consulting Ltd. 2016. Adelaide Wind Power Project: Post-Construction Wildlife Monitoring Report (2015).



APPENDIX E TABLES



Appendix E - Tables February 17, 2017

Table 2.1: Categories of Carcass Condition
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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.				
м	Moderate decomposition	Noticeable signs of decay or scavenging by insects; estimated 6 to 7 days.				
А	Advanced decomposition	Decomposed carcass, barely recognizable or not recognizable to species; estimated more than 7 days.				
С	C Complete decomposition Residual remains, such as feathers, bones, other scraps of tissu					
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



Appendix E - Tables February 17, 2017

Survey Date	Survey Type	Personnel	Time	Weather Conditions*
April 15, 2016	Habitat Mapping	M. Straus	10:15-16:00	10-18ºC, 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°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°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°C, 2 wind, 100% cloud cover, precipitation, no precipitation in the last 24hrs
June 15, 2016	ne 15, 2016 Monitoring		11:00-13:00	20°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	18-26ºC, 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°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 no preci		18-24°C, 1-4 wind, 0-5% cloud cover, no precipitation, no precipitation in the last 24hrs
July 11, 2016	Raptor July 11, 2016 Behavioural A. Corri Monitoring		8:53 -10:53	19-25°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°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°C, 1 wind, 50% cloud cover, no precipitation, no precipitation in the last 24hrs

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

* 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



Appendix E - Tables February 17, 2017

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

Month	Searcher	Placed	Scavenged	Found	Individual SE (Sex)
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	



Appendix E - Tables February 17, 2017

Month	Turbine	Vegetation/Crop	Ps (%)	Average Ps (%)
	6	Soy	0.89	
	7	Soy	1.00	
	11	Soy	0.97	
	12	Soy	0.97	
14 m /	14			0.97
May	17	Corn	0.95	0.97
	19	Corn	0.99	
	20	Agriculture	0.99	
	22	Soy	1.00	
	27	Agriculture	1.00	
	6	Soy	0.49	
	7	Soy	1.00	
	11	Soy	0.71	
	12	Soy	0.44	
June	14	Corn	0.78	0.80
June	17	Corn	0.84	0.80
	19	Corn	1.00	
	20	Agriculture	0.76	
	22	Soy	1.00	
	27	Agriculture	1.00	
	6	Soy	0.54	
	7	Soy	1.00	
	11	Soy	0.92	
	12	Soy	0.73	
1. J	14	Corn	0.49	0.02
July	17	Corn	0.87	0.83
	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



Appendix E - Tables February 17, 2017

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

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



Appendix E - Tables February 17, 2017

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

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

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

Month	с	SE	SC	PS	с	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



Appendix E - Tables February 17, 2017

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

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

Month	Species	Species Number of individuals		Total per month
Мау	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

To sub-Sec. o	May				ly	August		September		October		Total		
Turbine	с	С	с	С	с	С	с	С	с	С	с	С	с	С
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



Appendix E - Tables February 17, 2017

Month	с	SE	SC	PS	С	C per MW					
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				
С	Number of small bird carcasses located (uncorrected)										
Se	Searcher Effic	ciency Trial Res	Searcher Efficiency Trial Results								

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

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
Мау	Silver-haired Bat	1	7
June	Silver-haired Bat	1	11
h de c	Big Brown Bat	1	11
July	Hoary Bat	1	20
August	Hoary Bat	1	14
August	Red Bat	1	22
September	Silver-haired Bat	1	12
October	Hoary Bat	1	22
	Silver-haired Bat	3	111, 20
TOTAL		11	

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



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

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

Month	с	SE	sc	PS	с	C per MW	C per Iurbine
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



Appendix E - Tables February 17, 2017

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

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

Table 3.14: Adelaide Wind Energy Behavioural Survey Results, 2016

Date		Adults	
(2016)	#	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



Appendix E - Tables February 17, 2017

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

	Raw Fataliti	es 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



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	20	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 4	7854
Adelaide Wind Farm	11	Subset	9	5	2016	11:25	11:55	30	1	Nash Colville	4 4	7854
Adelaide Wind Farm	12	Subset	9	5	2018	12:00	12:30	30	1		4 4	7854
Adelaide Wind Farm	12	Subset	9	5	2016	12:30	12.30	30	1	Nash Colville	4 4	7854
Adelaide Wind Farm	14		9	5	2016	12:50	14:30	35	1	Nash Colville	4 4	7629
	17	Subset	9	5		14:35		30	1	Nash Colville	4 4	7829
Adelaide Wind Farm	20	Subset	9	5	2016		15:05	30	1	Nash Colville	4	7854
Adelaide Wind Farm		Subset	9	Ű	2016	15:10 15:40	15:40 16:20		1	Nash Colville		7854
Adelaide Wind Farm	22	Subset	9	5	2016	16:25	17:00	40	1	Nash Colville	4	
Adelaide Wind Farm	27	Subset	/	5	2016			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 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	0	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	/	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		Nash Colville	4	7854
Adelaide Wind Farm	17	Subset	16	5	2016	13:40	14:10	30		Nash Colville	4	7854
Adelaide Wind Farm	19	Subset	16	5	2016	14:55	15:25	30		Nash Colville	4	7750
Adelaide Wind Farm	20	Subset	16	5	2016	15:00	15:30	30		Nash Colville	4	7854
Adelaide Wind Farm	22	Subset	16	5	2016	15:35	16:05	30		Nash Colville	4	7854
Adelaide Wind Farm	27	Subset	16	5	2016	16:15	16:55	40		Nash Colville	4	7854
Adelaide Wind Farm	6	Subset	19	5	2016	10:00	10:30	30	-	Nash Colville	3	7854
Adelaide Wind Farm	7	Subset	19	5	2016	10:30	11:00	30	-	Nash Colville	3	7854
Adelaide Wind Farm	11	Subset	19	5	2016	11:05	11:35	30]	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]	Nash Colville	3	7854



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	



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	20	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	12	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	20	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	20	Subset	2	6	2016	14:45	15:15	30	1	Nash Colville	3	7854
Adelaide Wind Farm	27	Subset	2	6	2018	14.43	16:00	40	1	Nash Colville	3	7854
Adelaide Wind Farm	6	Subset	6		2018	9:50	10:20	30	1	Nash Colville	7	4000
	0 7			6	2016	10:25	10:55	30	1	Nash Colville	4	7854
Adelaide Wind Farm	11	Subset	6	6	2016	11:00	11:30		1			4500
Adelaide Wind Farm	14	Subset	6	6	2016	11:00	12:05	30 30	1	Nash Colville	4	7854
Adelaide Wind Farm	14	Subset	6	6	2016				1	Nash Colville	4	6500
Adelaide Wind Farm		Subset	6	6		12:10	12:40	30	1	Nash Colville	4	
	20 22	Subset	6	6	2016	12:45	13:15	30	1	Nash Colville	4	4500 7854
Adelaide Wind Farm		Subset	6	6	2016	13:15	13:45	30	1	Nash Colville	4	
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	/	3000
Adelaide Wind Farm	6	Subset	,	6	2016	10:40	11:05	25	1	Nash Colville	3	4000
Adelaide Wind Farm	/	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		Nash Colville	3	4500
Adelaide Wind Farm	12	Subset	9	6	2016	12:15	12:40	25		Nash Colville	3	3000
Adelaide Wind Farm	17	Subset	9	6	2016	12:45	13:15	30		Nash Colville	3	6500
Adelaide Wind Farm	19	Subset	9	6	2016	13:15	13:45	30		Nash Colville	7	7854



project name	turbine number	doa 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	<u>5-6m</u>	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	



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	20	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	20	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	20	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	<u></u>	7	2016	11:05	11:35	30	1	Nash Colville	5	3500
Adelaide Wind Farm	7	Subset		7	2016	11:40	12:10	30	1	Nash Colville	7	7854
Adelaide Wind Farm	11	Subset		7	2016	12:15	12:45	30	1	Nash Colville	5	7854
Adelaide Wind Farm	12	Subset		7	2016	12:50	13:20	30	1	Nash Colville	5	4500
Adelaide Wind Farm	12	Subset		7	2016	13:25	13:55	30	1	Nash Colville	5	3000
Adelaide Wind Farm	17	Subset	-+ /	7	2018	14:00	14:30	30	1	Nash Colville	5	6500
	17	200261	4	/	2010	14.00	14.00	50	1		J J	0000



project name	turbine number	doa 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	ļ
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	30	26	SW	Light Rain	40	None	ļ
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	<u>5-6m</u>	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 17	no	circular	50m radius, 100m by 100m	5-6m	22	14		None	40	None	
Adelaide Wind Farm Adelaide Wind Farm	17	no	circular circular	50m radius, 100m by 100m 50m radius, 100m by 100m	<u>5-6m</u> 5-6m	22 22	14		None None	40 40	None None	
Adelaide Wind Farm	20	no no	circular	50m radius, 100m by 100m	5-6m	22	14		None	40	None	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	22	14	E E	None	40	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	22	14	E 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	Ŵ	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	1
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	Ν	None	5	Drizzle	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	22	6	Ν	None	5	Drizzle	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	22	6	Ν	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	ļ
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	27	19	S	None	20	None	ļ
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	27	19	S	None	20	None	ļ
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	27	19	S	None	20	None	



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
Adeidide Wind Fulli												



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	Ν	None	20	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	26	16	Ν	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	Ν	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	Ν	None	15	None	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	30	11	Ν	None	15	None	
Adelaide Wind Farm	11	no	circular	50m radius, 100m by 100m	5-6m	30	11	Ν	None	15	None	
Adelaide Wind Farm	12	no	circular	50m radius, 100m by 100m	5-6m	30	11	Ν	None	15	None	
Adelaide Wind Farm	14	no	circular	50m radius, 100m by 100m	5-6m	30	11	Ν	None	15	None	
Adelaide Wind Farm	17	no	circular	50m radius, 100m by 100m	5-6m	30	11	Ν	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	



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]	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]	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]	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



project name	turbine number	doa 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	<u>5-6m</u>	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	



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	16:10	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	20	Subset	12	9	2016	16:35	17:05	30	1	Dan Dilario	4	950
	٢٢	200201	ΙZ	1	2010	10.00	17.00	50	1		4	750



project_name	turbine number	doa used	search area shape	search area dimension	transect separation m	temp celsius	wind speed	wind direction	precipitation	cloud cover percent	sianif weather	comments
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m		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	Ν	None	20	None	
Adelaide Wind Farm	7	no	circular	50m radius, 100m by 100m	5-6m	28	12	Ν	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	Ν	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	Ν	None	20	None	
Adelaide Wind Farm	20	no	circular	50m radius, 100m by 100m	5-6m	28	12	Ν	None	20	None	
Adelaide Wind Farm	22	no	circular	50m radius, 100m by 100m	5-6m	28	12	Ν	None	20	None	
Adelaide Wind Farm	27	no	circular	50m radius, 100m by 100m	5-6m	28	12	Ν	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	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	



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		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]	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	20	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	20	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	16:10	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	20	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	20	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	20	Subset	3	10	2018	14:20	14:50	30	1	Dan Dilario	4	3350
Adelaide Wind Farm	27	Subset	3	10	2018	14:55	15:25	30	1	Dan Dilario	4	1700
	۲۲	200261	5	10	2010	14.00	10.20	50	I		4	1700



project name	turbine number	doa 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	<u>5-6m</u>	22	11	S	None	<u>6</u>	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	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	



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		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	20	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	20	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	20	10	2016	10:15	17:00	30	1	Dan Dilario	4	7550
Adelaide Wind Farm	27	Subset	24	10	2016	10:50	11:20	30	1	Dan Dilario	4	7925
Adelaide Wind Farm	20	Subset	24	10	2018	11:25	11:55	30	1	Dan Dilario	4	7656
	20	200201	<u>۲</u> 4	10	2010	11,20	11.00	50	1		4	7000



project_name	turbine number	doa used	search area shape	search area dimension	transect separation m	temp celsius	wind speed	wind direction	precipitation	cloud cover percent	sianif weather	comments
Adelaide Wind Farm	19	no	circular	50m radius, 100m by 100m		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	



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



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	



Lossnov Workshyn F Med Lowy 4 5 TON	_name tur	lurbine_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
Accessor Weintern E. 3AA Strever, 4 5. 2014, 1130 113 1 Part Cohes		\$	/	4	<u> </u>	2016	8:55	9:25	30	1			7854	no
Aberbace Ward fam. 13. 5.44 5. 2016 13.2 12.50 30.2 1 New Costle -/p 754 Aberbace Ward fam. 9.1 3.44 Survey 4 5 2016 12.0 12.0 30.2 1 New Costle -/p 754 Aberbace Ward fam. 5 3.45 Survey 4 5 2016 12.0 13.3 33 1 New Costle -/p 754 Aberbace Ward fam. 4 6 2016 13.0 16.4 14.0 New Costle -/p 754 754 Aberbace Ward fam. 9 Reprovement 18 5 2016 13.0 10.0 New Costle -/p 0.00 76.0	Wind Farm	,		4	5					1		n/a		no
Approx Mart Mart 18. SAR Survey 4 5 21/2 12/2			/	4	5					1	Nash Colville	n/a		no
Accessite Ward org 12 SAR Survey 4 5 2016 12.5 200 1 Nort Cable org Addition Accessite Ward Carn 5 Ray to Size 14 6.2 11.5 5.3 1 Nare Cable org 11.55 Accessite Ward Carn 5 Ray to Size 16 6. 2016 11.55 1 Nare Cable org 0.1 Accessite Ward Carn 6 Start Size 10.3 1.3 1 Nare Cable org 0.1 0.1 Accessite Ward Carn 1 Ray of Size 18 2.01 11.00 1.6 Nare Cable org 0.1 0.1 Nare Cable 0.0			1	4	5					1		•		no
Assistant wind fram 9.4 5.4.5. Storey 4 5 7.01 1.9.5 3.5 1 Nath Conine m.g. 7.25.5 Assistant wind fram 5 Start Storey 4 5 10.1 14.2 14.5 10.1	Wind Farm	18	/	4	5					1	Nash Colville	n/a		no
Advance Name Sam S Advance Name Sam S Advance Name Sam S Low Sam Control	Wind Farm	21	1	4	5					1	Nash Colville	n/a		no
Adabase wind frame S Story at frame Ist S Total Non- Non- Non- Adabase wind frame 13 Story at frame 18 S Old 10.35 10.35 11 1930 Columb 10.00 0.00 Adabase wind frame 13 Story at frame 18 S 2014 10.35 10.35 11 1930 Columb 10.00 0.00 Adabase wind frame 18 Story at frame 18 Story at frame 18 Non- 10.00 10.00 10.00 10.00 <	Wind Farm	26	SAR Survey	4	5		13:20	13:55		1	Nash Colville	n/a		no
Addback wing com 8 Kepto kitz IB 3 2013 ID-33 ID-34 ID-34 <thid-34< th=""> ID-34 <thid-34< th=""> <</thid-34<></thid-34<>	Wind Farm	5	SAR Survey	4	5	2016		14:45	35	1	Nash Colville	n/a	7854	no
Addebs Word-orm 9 Registration 9 Registration 003 1030 1030 1030 1 Neutr Celebre n/n n/n n/n n/n Addebs Word Nm 18 Registration 1 Registration 1 Neutr Celebre n/n n	Wind Farm	5	Raptor Blitz	18	5	2016	9:55	10:10	15	1	Nash Colville	n/a	n/a	No
Adeada Wind Form 13 Books Biz 18 5 2014 1126 1126 112	Wind Farm	8	Raptor Blitz	18	5				15	1	Nash Colville	n/a	n/a	No
Appendix Write From 1.5 Kender sitte 18 5 21/4 11/25 11/16 1 Nath Cohle N/2 M/2 M/2 Appendix Write From 2 Report sitte 18 5 21/4 11/5 11/6	Wind Farm	9	Raptor Blitz	18	5					1	Nash Colville	n/a	n/a	No
Adesida Wind Sam 18 Finite Pice 18 5 2016 1133 1210 15 1 Nand Colling r/n n/n Adediak Wind Tam 24 Segula Bin 16 5 2016 1225 1240 15 1 Nand Colling n/n n/n n/n Adediak Wind Tam 24 Segula Bin 16 5 2016 1255 1240 15 1 Nand Colling n/n n/n <t< td=""><td>Wind Farm</td><th>13</th><td>Raptor Blitz</td><td>18</td><td>5</td><td>2016</td><td></td><td></td><td>20</td><td>1</td><td>Nash Colville</td><td>n/a</td><td>n/a</td><td>No</td></t<>	Wind Farm	13	Raptor Blitz	18	5	2016			20	1	Nash Colville	n/a	n/a	No
Addiads Wind Form 21 Registra filtz 18 5 21/6 1/2.20 1/2.50 1/5 1 Nagn Ceville n/g n/g Addiads Wind Form 5 Max Exerct 1 6.8 20.0 15.0 15.0 1 Nagn Ceville n/g n/g Addiads Wind Form 5 Max Exerct 1 6.8 20.0 15.0 1 Nagn Ceville n/g n/g 75.4 Addiads Wind Form 13 Max Exerct 1 6.8 20.0 3.0 1 Nagn Ceville n/g 75.4 Addiads Wind Form 13 Max Exerct 1 6.8 20.0 13.0 10.0 Nagn Ceville n/g 75.4 Addiads Wind Form 1 6.8 20.0 13.0 10.0 11.0 10.0 10.0 10.0 Nagn Ceville n/g 75.4 Addiads Wind Form 5 Staptor sitz 8.8 20.0 10.0 11.0 10.0 Nagn Ceville <t< td=""><td>Wind Farm</td><th>15</th><td>Raptor Blitz</td><td>18</td><td>5</td><td>2016</td><td></td><td></td><td>15</td><td>1</td><td>Nash Colville</td><td>n/a</td><td>n/a</td><td>No</td></t<>	Wind Farm	15	Raptor Blitz	18	5	2016			15	1	Nash Colville	n/a	n/a	No
Adecide Write form 26 Popler Bilz 18 2 1 Heart Caville Au Au Adecide Write form 6 568 Survey 1 6 2016 1015 1164 30 1 Heart Caville Au 7554 Adecide Write form 7 3 558 Survey 1 6 2016 1015 1164 30 1 Heart Caville Au 7554 Advacite Write form 1 3<88 Survey	Wind Farm	18	Raptor Blitz	18	5	2016		12:10	15	1	Nash Colville	n/a	n/a	No
Abelacie Wrafform S SA8 5 sorry I 6 2014 10143 10143 101 Noth Covine n/o 77854 Addebig Wrafform 9 SA8 5 strvp I 6 2016 11/30 30 I Noth Covine n/o 77854 Addebig Wrafform 1 SA8 5 strvp I 6 2016 11/30 30 I Noth Covine n/o 77854 Addebig Wrafform 1 SA8 5 strvp I 6 2016 11/30 30 I Noth Covine n/o 77854 Addebig Wraf Strm 1 6 2016 13/35 14/25 30 I Noth Covine n/o 7854 Addebig Wraf Strm 2 SA8 5 strvp I 6 2016 11/30 11/30 10 Noth Covine n/o 7854 Addebig Wraf Strm 2 SA8 5 strvp I 6 2016 11/30 11/30 10 Noth Covine n/o 70/	Wind Farm	21	Raptor Blitz	18	5	2016	12:25	12:40	15	1	Nash Colville	n/a	n/a	No
Adecide Wing Form 8 SAR Survey 1 4 2016 11/20 30 1 Non-Cohle n/a 7554 Adecide Wing Form 13 SAR Survey 1 6 2016 11/30 30 1 Non-Cohle n/a 7554 Adecide Wing Form 13 SAR Survey 1 6 2016 11/30 30 1 Non-Cohle n/a 7554 Adecide Wing Form 13 SAR Survey 1 6 2016 11/30 10/10 10/10 7554 Adecide Wing Form 21 SAR Survey 1 6 2016 11/30 10/10 11/20 10/10 10/10 10/10 7554 Adecide Wing Form 2 SAR Survey 1 6 2016 11/30 11/20 10/20 10/20 10/20 10/20 10/20 10/20 10/20 10/20 10/20 10/20 10/20 10/20 11/20 10/20 10/20 10/20 10/20	Wind Farm	26	Raptor Blitz	18	5	2016	12:50	13:05	15	1	Nash Colville	n/a	n/a	No
Advecce Wind Form 9 SAR Survey 1 6 2016 1130 1130 30 1 Nota Collie n/a 7784 Adviside Wind Form 15 SAR Survey 1 6 2016 1225 30 1 Nota Collie n/a 7854 Adviside Wind Form 15 SAR Survey 1 6 2016 1230 30 1 Nota Collie n/a 7854 Adviside Wind Form 7 5 Region Filt 6 2016 1230 30 1 Nota Collie n/a 7854 Adviside Wind Form 7 Region Filtz 8 6 2016 1130 1130 1 Nota Collie n/a	Wind Farm	5	SAR Survey	1	6	2016	10:15	10:45	30	1	Nash Colville	n/a	7854	no
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Adelaide Wind Farm 18 Raptor Bitz 6 7 2016 13:15 13:30 15 1 Nash Colville n/a n/a Adelaide Wind Farm 21 Raptor Bitz 6 7 2016 13:35 13:50 15 1 Nash Colville n/a n/a Adelaide Wind Farm 26 Raptor Bitz 6 7 2016 13:55 14:10 15 1 Nash Colville n/a n/a Adelaide Wind Farm 26 Raptor Bitz 6 7 2016 13:55 14:10 15 1 Nash Colville n/a n/a Adelaide Wind Farm 5 Raptor Bitz 13 7 2016 11:45 12:00 15 1 Nash Colville n/a n/a					/							-		No
Adelaide Wind Farm 21 Raptor Bitz 6 7 2016 13:35 13:50 15 1 Nash Colville n/a n/a Adelaide Wind Farm 26 Raptor Blitz 6 7 2016 13:55 14:10 15 1 Nash Colville n/a n/a Adelaide Wind Farm 5 Raptor Blitz 13 7 2016 11:45 12:00 15 1 Nash Colville n/a n/a				_	/					<u> </u>		•		No
Adelaide Wind Farm 26 Raptor Blitz 6 7 2016 13:55 14:10 15 1 Nash Colville n/a n/a Adelaide Wind Farm 5 Raptor Blitz 13 7 2016 11:45 12:00 15 1 Nash Colville n/a n/a					/								1	No
Adelaide Wind Farm 5 Raptor Blitz 13 7 2016 11:45 12:00 15 1 Nash Colville n/a n/a				-	/									No
				-	7]	1	-		No
LAdelaide Wind Farm 1 8 Raptor Blitz 1377201612:0512:15100101010101000000000000000000					7					1				No
			Raptor Blitz	13	7	2016			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		,			7					1		•		No
Adelaide Wind Farm 13 Raptor Blitz 13 7 2016 12:40 12:55 15 1 Nash Colville n/a n/a					7					1		· · · · · · · · · · · · · · · · · · ·	n/a	No
Adelaide Wind Farm 15 Raptor Blitz 13 7 2016 13:00 13:10 10 1 Nash Colville n/a n/a			Raptor Blitz		7					1		n/a		No
Adelaide Wind Farm 18 Raptor Blitz 13 7 2016 13:20 13:35 15 1 Nash Colville n/a n/a	Wind Farm	18	Raptor Blitz	13	7	2016	13:20	13:35	15	1	Nash Colville	n/a	n/a	No



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	Į
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	l
Adelaide Wind Farm	8	Circular	50 m radius	<u>5-6 m</u>	20	13	W	None	15	None	l
Adelaide Wind Farm	9	Circular	50 m radius	5-6 m	20	13	W	None	15	None	ł
Adelaide Wind Farm	13	Circular	50 m radius	5-6 m	20	13	W	None	15	None	l
Adelaide Wind Farm	15	Circular	50 m radius	5-6 m	20	13	W	None	15	None	l
Adelaide Wind Farm	18	Circular	50 m radius	<u>5-6 m</u>	20	13	W	None	15	None	ł
Adelaide Wind Farm	21	Circular	50 m radius	5-6 m	20	13	W	None	15	None	l
Adelaide Wind Farm	26	Circular	50 m radius	<u>5-6 m</u>	20	13	W	None	15	None	l
Adelaide Wind Farm	5	circular	50m radius	5-6m	25	17	SE	None	5	None	l
Adelaide Wind Farm	8	circular	50m radius	5-6m	25	17	SE	None	5	None	ł
Adelaide Wind Farm	9	circular	50m radius	5-6m	25	17	SE	None	5	None	ł
Adelaide Wind Farm	13	circular	50m radius	5-6m	25	17	SE	None	5	None	<u> </u>
Adelaide Wind Farm	15	circular	50m radius	5-6m	25	17	SE	None	5	None	<u> </u>
Adelaide Wind Farm	18	circular	50m radius	5-6m	25	17	SE	None	5	None	<u> </u>
Adelaide Wind Farm	21	circular	50m radius	5-6m	25	17	SE	None	5	None	<u> </u>
Adelaide Wind Farm	26	circular	50m radius	5-6m	25	17	SE	None	5	None	t
Adelaide Wind Farm	5	Circular	50 m radius	5-6 m	14	24	SE	Drizzle	Overcast	Light Rain	ł
Adelaide Wind Farm	8	Circular	50 m radius	5-6 m	14	24	SE	Drizzle	Overcast	Light Rain	ł
Adelaide Wind Farm	9	Circular	50 m radius	5-6 m	14	24	SE	Drizzle	Overcast	Light Rain	<u> </u>
Adelaide Wind Farm	13	Circular	50 m radius	<u>5-6 m</u>	14	24	SE	Drizzle	Overcast	Light Rain	l
Adelaide Wind Farm	15	Circular	50 m radius	<u>5-6 m</u>	14	24	SE	Drizzle	Overcast	Light Rain	<u> </u>
Adelaide Wind Farm	18	Circular	50 m radius	5-6 m	14	24	SE	Drizzle	Overcast	Light Rain	l
Adelaide Wind Farm	21	Circular	50 m radius	5-6 m	14	24	SE	Drizzle	Overcast	Light Rain	<u> </u>
Adelaide Wind Farm	5	circular	50m radius	5-6m	21	13	S	Rain	20	Light Rain	<u> </u>
Adelaide Wind Farm	8	circular	50m radius	5-6m	21	13	S	Rain	20	Light Rain	ł
Adelaide Wind Farm	9	circular	50m radius	5-6m	21	13	S	Rain	20	Light Rain	l
Adelaide Wind Farm	13	circular	50m radius	5-6m	21	13	S	Rain	20	Light Rain	ł
Adelaide Wind Farm	15	circular	50m radius	5-6m	21	13	S	Rain	20	Light Rain	t
Adelaide Wind Farm	18	circular	50m radius	5-6m 5-6m	21	13	S	Rain	20	Light Rain	ł
Adelaide Wind Farm	21	circular	50m radius		21	13	S	Rain	20	Light Rain	ł
Adelaide Wind Farm	5 8	Circular Circular	50 m radius 50 m radius	<u>5-6 m</u> 5-6 m	24 24	19	N	None None	5	None	l
Adelaide Wind Farm	<u> </u>	Circular	50 m radius	5-6 m	24	19	N	None	5	None	l
Adelaide Wind Farm	,				24	19			5	None	l
	13	Circular	50 m radius	5-6 m	= :	.,	N	None	5	None	l
Adelaide Wind Farm	18 21	Circular Circular	50 m radius 50 m radius	<u>5-6 m</u> 5-6 m	24 24	19 19	N	None None	5	None None	<u> </u>
Adelaide Wind Farm	21	Circular	50 m radius	5-6 m	28-30	5-10	W	None	15	Rain	<u> </u>
Adelaide Wind Farm	18	Circular	50 m radius	5-6 m	28-30	5-10	W	None	15	Rain	<u> </u>
Adelaide Wind Farm	15	Circular	50 m radius	5-6 m	28-30	5-10	W	None	15	Rain	<u> </u>
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	1
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	<u> </u>	None	15	None	
Adelaide Wind Farm	13	Circular	50 m radius	5-6 m	28	16	S	None	15	None	1
Adelaide Wind Farm	15	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	21	Circular	50 m radius	5-6 m	28	16	S	None	15	None	1
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	28	4	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	1
Adelaide Wind Farm	13	Circular	50 m radius	5-6 m	29	6 6	NW	None	20	None	
	15	Circular	50 m radius	5-6 m	29	-	NW	None			
Adelaide Wind Farm											
Adelaide Wind Farm Adelaide Wind Farm	18	Circular	50 m radius	5-6 m	29	6	NW	None	20 20	None None	ļ



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	/	2016	12:30	12:45	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm	18	Raptor Blitz	19	/	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 13:30	13:25 13:45	15	1	Nash Colville	n/a	n/a	No
Adelaide Wind Farm Adelaide Wind Farm	<u>26</u> 5	Raptor Blitz SAR Survey	19 27	/ 7	2016 2016	10:30	13:45	15 30	1	Nash Colville Nash Colville	n/a	n/a 7854	No
Adelaide Wind Farm	8	SAR Survey	27	7	2016	11:05	11:35	30	1	Nash Colville	n/a n/a	7854	no no
Adelaide Wind Farm	9	SAR Survey	27	7	2018	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		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	,	SAR Survey	26	10	2016	13:50 14:25	14:20 15:00	30	1	Dan Dilario	n/a	8175	no
Adelaide Wind Farm	13 15	SAR Survey SAR Survey	26 26	10	2016 2016	14:25	15:00	<u>35</u> 30	1	Dan Dilario Dan Dilario	n/a	8050 8020	no
Adelaide Wind Farm Adelaide Wind Farm	13	SAR Survey	26	10 10	2016	15:40	16:20	40	1	Dan Dilario	n/a 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 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	20	Raptor Blitz	1	10	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	11	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		Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	/	Raptor Blitz	15	11	2016	12:00	12:20	20		Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	6	Raptor Blitz	15	11	2016	12:25	12:40	15		Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	11	Raptor Blitz	15	11	2016	12:45	13:00	15	<u> </u>	Dan Dilario	n/a	n/a	No
Adelaide Wind Farm	12	Raptor Blitz	15	11	2016	13:05	13:25	20		Dan Dilario	n/a	n/a	No



Accele with an best of the second s	project name	turbine number	search area shape	search area dimension	transect separation m	temp celsius	wind speed	wind direction	precipitation	cloud cover percent	sianif weather	comments
Joseba Proc. File St. Org. St. Org. St. Org. Nove							6					
Londer (ms/styr) V Operator Strends Advance Strends	Adelaide Wind Farm	5	Circular	50 m radius	5-6 m	26	23	NW	None	15	None	
Abstact Wright 3 Group 3 Group 4 5 100 None 3 Base Abstact Wright 3 Group 3 Group 3 Group 3 Group Abstact Wright 3 Group 3 Fedde - 6 100 force - 1 Mode Abstact Wright 3 Group 3 Fedde - 6 100 force - 1 Mode Abstact Wright 3 6 Fedde 1 6 6 1 3 4 6 6 1 6	Adelaide Wind Farm	8	Circular	50 m radius	5-6 m	26	23	NW	None	15	None	
Abdes writer D Cecury String D Long Long Long Abdes writer 0 0 Cecury String 0 <	Adelaide Wind Farm	9	Circular	50 m radius	5-6 m	26	23	NW	None	15	None	
Abatter with one Part The Charace The Charace Solution of the Charace The Characee <th< td=""><td>Adelaide Wind Farm</td><td>13</td><td>Circular</td><td>50 m radius</td><td>5-6 m</td><td>26</td><td>23</td><td>NW</td><td>None</td><td>15</td><td>None</td><td></td></th<>	Adelaide Wind Farm	13	Circular	50 m radius	5-6 m	26	23	NW	None	15	None	
Abboow Wind and Babboow Wind and Abboow	Adelaide Wind Farm	15	Circular	50 m radius	5-6 m	26	23	NW	None	15	None	
Advisor Wey New Yes Part Circles Open Part Lane Sign Part Bits	Adelaide Wind Farm	18	Circular	50 m radius	5-6 m	26	23	NW	None	15	None	
Access Weillion Second American Second	Adelaide Wind Farm	21	Circular	50 m radius	5-6 m	26	23	NW	None	15	None	
LASSBO Work for 8 Ore Jar Bern offic Non End official Source S Li We Merce E Non CASSBO Work for 1 Ore Jar Jar registe Source S Li We Merce Li Non CASSBO Work for 0 Ore Jar Jar registe Source Source Non Source	Adelaide Wind Farm	26	Circular	50 m radius	5-6 m	26	23	NW	None	15	None	
Adeback Winffam P. Synap Synap Synap Bite Hare Adeback Winffam 1 Control Min mail Synap Hit Li W Mins Li Hit Synap Hit Hit W Mins Hit Hit W Hit	Adelaide Wind Farm	5	circular	50m radius	5-6m	31	15	W	None	10	None	
Adable Wein Sim 13 Chools Sim Sola Sim 31 15 W Name 10 Name Adable Wein Sim 1 Solar Sim Sola	Adelaide Wind Farm	8	circular	50m radius	5-6m	31	15	W	None	10	None	
Absolve Wartern L General Manual Mark Man 1 N None 10 None Absolve Wartern 12 0.0 1 0.0001 30 10 None 50 Absolve Wartern 12 0.0007 0.00007 0.00007 0.00007 10 None Absolve Wartern 12 0.0007 0.00007 0.00007 10 None Absolve Wartern 13 0.0007 0.00007 10 None Absolve Wartern 14 0.00017 0.00017 0.0001 0.000 11 None Absolve Wartern 15 0.00017 0.0001 0.000 15 None Absolve Wartern 16 0.0007 0.00010 0.000 15 None Absolve Wartern 16 0.0007 0.00010 0.000 15 None Absolve Wartern 16 0.0007 0.00000 0.0000 15 None Absolve Wartern 0.00	Adelaide Wind Farm	9	circular	50m radius	5-6m	31	15	W	None	10	None	
Adecise wite Yam Yam 21 delaya Source 50 25 7 16 None 57 None Adecise wite Num Yam 3 delaya wite Yam 3 delaya wite Yam 3 None 15 State Adecise wite Yam 4 delaya wite Yam 4 None 10 None Adecise wite Yam 6 deman Yam State None 13 None Adecise Wite Yam 13 deman Yam State None 13 None Adecise Wite Yam 13 deman Yam State State None 13 None Adecise Wite Yam 15 deman Yam State State None 13 None Adecise Wite Yam 16 deman Yam State None 13 None Adecise Wite Yam 18 deman Yam State 27 18 None 13 None Adecise Wite Yam 18 deman Yam State 20	Adelaide Wind Farm	13	circular	50m radius	5-6m	31	15	W	None	10	None	
Abstace Worldam Ist Group Sim 1954. System No 1 Han Han Abstace Worldam A Group Sim Made 5 km No 1 Particle Abstace Worldam 6 Group Sim Made 5 km No No No Adstace Worldam 6 Group Sim Made 5 km No No No No Adstace Worldam 15 Group Sim Made 5 km No No No No Adstace Worldam 16 Group Sim Made 5 km 2 km No No No No Adstace Worldam 18 Group Sim Made 5 km 2 km No	Adelaide Wind Farm	15	circular	50m radius	5-6m	31	15	W	None	10	None	
Acade wind fram 52 Gamma Simulation Samualia Samualia <td>Adelaide Wind Farm</td> <td>21</td> <td>circular</td> <td>50m radius</td> <td>5-6m</td> <td>25</td> <td>9</td> <td>NE</td> <td>None</td> <td>50</td> <td>None</td> <td></td>	Adelaide Wind Farm	21	circular	50m radius	5-6m	25	9	NE	None	50	None	
Adende Windfam S Primative S-m P PA NW Name Lo Nome Adenda Windfam 8 chold Status Status Status Nome Nome <td>Adelaide Wind Farm</td> <td>18</td> <td>circular</td> <td>50m radius</td> <td>5-6m</td> <td>30</td> <td>27</td> <td>S</td> <td>None</td> <td>15</td> <td>Rain</td> <td></td>	Adelaide Wind Farm	18	circular	50m radius	5-6m	30	27	S	None	15	Rain	
Adedice WindForm 8 Orcular Stim rodus Series 27 26 INV None 13 None Addeds WindForm 13 Orcular Stim rodus Science 27 24 INV None 15 None Addeds WindForm 13 Orcular Stim rodus Science 22 24 INV None 15 None Addeds WindForm 13 Orcular Stim rodus Science 22 24 INV None 15 None Addeds WindForm 2 Orcular Stim rodus Science 22 28 NV None 15 None Addeds WindForm 2 Orcular Stim rodus Science 22 28 NV None 15 None 16 Addeds WindForm 16 None Addeds WindForm 16 </td <td>Adelaide Wind Farm</td> <td>26</td> <td>circular</td> <td>50m radius</td> <td>5-6m</td> <td>30</td> <td>27</td> <td>S</td> <td>None</td> <td>15</td> <td>Rain</td> <td></td>	Adelaide Wind Farm	26	circular	50m radius	5-6m	30	27	S	None	15	Rain	
Accords Wind Sam Y Disc.of John module 3-bit 2/2 2/8 NW Hene 1.3 Nova Accords Wind Sam 12 dic.log John module 1-bit Dic.log John module	Adelaide Wind Farm	5	circular	50m radius	5-6m	27	26	NW	None	15	None	
Addeds Wind Form 13 Diskuit John rodu John Strengt John Strengt John Strengt Name How How <th< td=""><td>Adelaide Wind Farm</td><td>8</td><td>circular</td><td>50m radius</td><td>5-6m</td><td>27</td><td>26</td><td>NW</td><td>None</td><td>15</td><td>None</td><td></td></th<>	Adelaide Wind Farm	8	circular	50m radius	5-6m	27	26	NW	None	15	None	
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Agenda Wind Form 15 Chourd Shore with a direction Shore direction		13	circular		5-6m	27	26		None	15	None	
Adeciage Wind Form 18 clicylor Starting with Form 27 28 NW More 15 None Adeciage Wind Form 2 decider Starting with Form 2 8 NW More 15 None Adecider Wind Form 2 decider Starting with Form 16 None 15 None Adecider Wind Form 0 Clicylor Starting with Form 16 None 16 None Adecider Wind Form 1 Clicylor Starting with Form 22 18 E Heary Nam 40 Heary Nam Adecider Wind Form 15 Clicylor Starting with Form 22 18 E Heary Nam 40 Heary Nam	Adelaide Wind Farm	15	circular	50m radius	5-6m	27	26		None	15	None	
Addition 21 declar Stm odula 5 cm 77 24 NW Hore 13 Num Addition 70 20 NW Kone 13 Nume 13 Nume Addition 70 26 NW Kone 13 Nume 13 Nume Addition 70 26 NW Kone 13 Nume 14 Nume 14 Nume 14 Nume 15 Nume 16 Nume Nume 16 Nume Nume 16 Nume Nume 16 Nume Nume 16 Nume Nume Nume Nume Nume Nume </td <td>Adelaide Wind Farm</td> <td>18</td> <td>circular</td> <td>50m radius</td> <td></td> <td>27</td> <td>26</td> <td></td> <td>None</td> <td>15</td> <td>None</td> <td></td>	Adelaide Wind Farm	18	circular	50m radius		27	26		None	15	None	
Abstick Wind Fam S Obschlag Sen 27 18 F Heavy Ban 40 Heavy Ban Addidid Wind Fam 9 discut Strandilla 5.6m 22 18 F Heavy Ban 40 Heavy Ban Addidid Wind Fam 9 discut Strandilla 5.6m 22 18 E Heavy Ban 40 Heavy Ban Addidid Wind Fam 18 discut Strandilla 5.6m 22 18 E Heavy Ban 40 Heavy Ban Addidid Wind Fam 18 discut Strandilla 5.6m 22 18 E Heavy Ban 40 Heavy Ban Addidid Wind Fam 3 discut Strandilla 5.6m 22 18 E Heavy Ban 40 <	Adelaide Wind Farm	21	circular	50m radius	5-6m	27			None	15	None	
Addials Wind Fam S Circular Som radiu, S-4m 22 18 E Houry Roin 40 Houry Roin Addials Wind Fam 9 Circular Som radiu, S-4m 22 18 E Houry Roin 40 Heavy Roin Addials Wind Fam 1 Circular Som radiu, S-4m 22 18 E Heavy Roin 40 Heavy Roin Addials Wind Fam 13 Circular Som radiu, S-4m 22 18 E Heavy Roin 40 Heavy Roin Addials Wind Fam 13 Circular Som radiu, S-4m 22 18 E Heavy Roin 40 Heavy Roin Addials Wind Fam 2 Circular Som radiu, S-4m 22 18 E Heavy Roin 40 Heavy Roin 40 <td>Adelaide Wind Farm</td> <td>26</td> <td>circular</td> <td>50m radius</td> <td>5-6m</td> <td>27</td> <td>26</td> <td>NW</td> <td>None</td> <td>15</td> <td>None</td> <td></td>	Adelaide Wind Farm	26	circular	50m radius	5-6m	27	26	NW	None	15	None	
Indegrave Wind Fram 8 Creation 90m code, Share code, Adebiase Wind Fram F Heavy Roin 40 Heavy Roin Adebiase Wind Fram 13 Creation Strin code, Strin c	Adelaide Wind Farm	5	circular	50m radius	5-6m	22	18	E	Heavy Rain		Heavy Rain	
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Adelaide Wind Farm12Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm14Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm17Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm17Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm19Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm20Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm22Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm27Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm7Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm7Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm7Circular50 m radius5-6 m1413SNone15NoneAdelaide Wind Farm6Circular50 m radius<	Adelaide Wind Farm	11	Circular	50 m radius		14	16		Heavy Rain		Heavy Rain	
Adelaide Wind Farm14Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm17Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm19Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm20Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm22Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm27Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm7Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm7Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm7Circular50 m radius5-6 m1413SNone15NoneAdelaide Wind Farm6Circular50 m radius5-6 m1413SNone15NoneAdelaide Wind Farm6Circular50 m radius5-6 m1413SNone15NoneAdelaide Wind Farm6Circular50 m radius5-6 m14 <td>Adelaide Wind Farm</td> <td>12</td> <td>Circular</td> <td>50 m radius</td> <td></td> <td>14</td> <td>16</td> <td></td> <td>Heavy Rain</td> <td>60</td> <td>Heavy Rain</td> <td></td>	Adelaide Wind Farm	12	Circular	50 m radius		14	16		Heavy Rain	60	Heavy Rain	
Adelaide Wind Farm17Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm19Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm20Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm22Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm27Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm27Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm7Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm7Circular50 m radius5-6 m1413SNone15NoneAdelaide Wind Farm6Circular50 m radius5-6 m1413SNone15NoneAdelaide Wind Farm11Circular50 m radius5-6 m1413SNone15None	Adelaide Wind Farm	14	Circular		5-6 m	14	16	SW	Heavy Rain	60	1	
Adelaide Wind Farm19Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm20Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm22Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm27Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm7Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm7Circular50 m radius5-6 m1413SNone15NoneAdelaide Wind Farm6Circular50 m radius5-6 m1413SNone15NoneAdelaide Wind Farm6Circular50 m radius5-6 m1413SNone15NoneAdelaide Wind Farm11Circular50 m radius5-6 m1413SNone15None						14			/		· · · · · · · · · · · · · · · · · · ·	
Adelaide Wind Farm20Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm22Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm27Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm7Circular50 m radius5-6 m1413SNone15NoneAdelaide Wind Farm6Circular50 m radius5-6 m1413SNone15NoneAdelaide Wind Farm6Circular50 m radius5-6 m1413SNone15NoneAdelaide Wind Farm11Circular50 m radius5-6 m1413SNone15None						14						
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Adelaide Wind Farm27Circular50 m radius5-6 m1416SWHeavy Rain60Heavy RainAdelaide Wind Farm7Circular50 m radius5-6 m1413SNone15NoneAdelaide Wind Farm6Circular50 m radius5-6 m1413SNone15NoneAdelaide Wind Farm6Circular50 m radius5-6 m1413SNone15NoneAdelaide Wind Farm11Circular50 m radius5-6 m1413SNone15None						14			'			
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 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 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						14						
Adelaide Wind Farm 11 Circular 50 m radius 5-6 m 14 13 S None 15 None		6										
		11										
	Adelaide Wind Farm	12	Circular	50 m radius	5-6 m	14	13	S	None	15	None	



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

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
	20	200201	۲١	10	2010	1177	11/7	0	1		J



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	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/q	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
	20	n/u	ΠŪ			5-011	4	IU	



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	20	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	20		20		
Adelaide Wind Farm	14	None None	30	None None	Not surveyed due to maintenance Not surveyed - field staff went home sick
	17		30		· · · · · · · · · · · · · · · · · · ·
Adelaide Wind Farm		None		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	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
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Appendix F4: Missed Survey Raptor Mortaility 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 Mortaility 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	Ν	None	Clear	None	Not surveyed due to turbine construction
Adelaide Wind Farm	15	Circular	50 m radius	5-6 m	24	19	Ν	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

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
	2016	19	Subset	Nash Colville	No	21	7	7/21/2016	Summer	Anna Corrigan	7:30	N/A	Baltimore Oriole
Adelaide Wind Farm		12	Subset	Nash Colville	No	21	7	7/21/2016			7:45	N/A	Hoary Bat
	2016	7	Subset	Nash Colville	No	29	7	7/29/2016		Melissa Straus	7:10	N/A	Gray Catbird
	2016	17	Subset	Nash Colville	No	29	7	7/29/2016	Summer	Melissa Straus	7:45	N/A	Hoary Bat
	2016	14	Subset	Nash Colville	No	29	7	7/29/2016		Melissa Straus	7:55	N/A	Gray Catbird
	2016	17	Subset	Nash Colville	No	8	8	8/8/2016	Summer	Anna Corrigan	8:15	17:30	Horned Lark
	2016	20	Subset	Nash Colville	No	8	8	8/8/2016	Summer	Anna Corrigan	8:30	N/A	Cedar Waxwing
	2016	27	Subset	Nash Colville	No	8	8	8/8/2016	Summer	Anna Corrigan	8:50	N/A	Eastern Red Bat
	2016	6	Subset	Nash Colville	No	11	8	8/11/2016		Anna Corrigan	8:20	N/A	Hoary Bat
	2016	11	Subset	Nash Colville	No	11	8	8/11/2016		Anna Corrigan	8:35	N/A	Silver-haired Bat
	2016	12	Subset	Nash Colville	No	11	8	8/11/2016		Anna Corrigan	8:50	N/A	Savannah Sparrow
	2016	20	Subset	Nash Colville	No	18	8	8/18/2016		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

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	1 <i>7</i> T	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	1 <i>7</i> T	449157	4763610	13
Adelaide Wind Farm	2016	19	N/A	N/A	thawed	1 <i>7</i> T	442931	4764967	16
Adelaide Wind Farm	2016	22	Lasionycteris noctivagans	LANO	thawed	1 <i>7</i> T	438286	4763222	27
Adelaide Wind Farm	2016	6	Lasiurus borealis	LABO	thawed	1 <i>7</i> T	451970	4762611	5
Adelaide Wind Farm	2016	14	N/A	N/A	thawed	1 <i>7</i> T	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	1 <i>7</i> T	444500	4765056	4
Adelaide Wind Farm	2016	27	Pheucticus Iudovicianus	RBGR	thawed	1 <i>7</i> T	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	1 <i>7</i> T	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	1 <i>7</i> T	442935	4764957	17
Adelaide Wind Farm	2016	22	Eptesicus fuscus	EPFU	thawed	1 <i>7</i> T	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	1 <i>7</i> T	449629	4762180	45
Adelaide Wind Farm	2016	11	Eptesicus fuscus	EPFU	thawed	1 <i>7</i> T	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	1 <i>7</i> T	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	1 <i>7</i> T	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	1 <i>7</i> T	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		14	Dumetella carolinensis	GRCA	thawed	1 <i>7</i> T	447151	4764843	21
Adelaide Wind Farm		17	Eremophila alpestris	HOLA	thawed	1 <i>7</i> T	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	1 <i>7</i> T	436002	4765466	42
Adelaide Wind Farm	2016	6	Lariurus cinereus	LACI	thawed	1 <i>7</i> T	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	1 <i>7</i> T	447883	4763364	6
Adelaide Wind Farm	2016	20	Turdus migratorius	AMRO	thawed	1 <i>7</i> T	440259	4765236	8
Adelaide Wind Farm	2016	22	Regulus satrapa	GCKI	thawed	17T	438316	4763208	1

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	Ν	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		19	ENE	thread	18	5-8	10	None	0	1	1	dirt	1
Adelaide Wind Farm		12	WNW	thread	18	5-8	10	None	0	1	1	rock	1
Adelaide Wind Farm		7	SW	tag	18	5	40	None	0	1	1	Soil	2
Adelaide Wind Farm		17	S	tape	18	5	40	None	0	1	1	Veg	2
Adelaide Wind Farm		14	WSW	tag	18	5	40	None	0	1	1	Soil	1
Adelaide Wind Farm		17	ΕΕ	thread	17-19	4-5	5	None	0	0	1	short veg	2
Adelaide Wind Farm		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]

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	1 <i>7</i> T	438480	4765479	23
Adelaide Wind Farm	2016	11	Lariurus cinereus	LACI	thawed	1 <i>7</i> T	449163	4763607	20
Adelaide Wind Farm	2016	22	Lariurus cinereus	LACI	thawed	1 <i>7</i> T	438308	4763216	3
Adelaide Wind Farm	2016	7	Buteo jamaicensis	RTHA	thawed	1 <i>7</i> T	449633	4762198	29
Adelaide Wind Farm	2016	6	Lariurus cinereus	LACI	thawed	1 <i>7</i> T	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	1 <i>7</i> T	447866	4763368	15
Adelaide Wind Farm	2016	17	Passerculus sandwichensis	SAVS	thawed	1 <i>7</i> T	444522	4765050	20
Adelaide Wind Farm	2016	27	Lariurus cinereus	LACI	thawed	1 <i>7</i> T	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	1 <i>7</i> T	449152	4763625	1
Adelaide Wind Farm	2016	19	Falco peregrinus	PEFA	thawed	1 <i>7</i> T	442979	4764972	31
Adelaide Wind Farm	2016	7	Lasiurus borealis	LABO	thawed	1 <i>7</i> T	449650	4762146	5
Adelaide Wind Farm	2016	14	Lariurus cinereus	LACI	thawed	1 <i>7</i> T	447169	4764800	49
Adelaide Wind Farm	2016	20	Sphyrapicus varius	YBSA	thawed	1 <i>7</i> T	440242	4765220	14
Adelaide Wind Farm	2016	7	Lasionycteris noctivagans	LANO	thawed	1 <i>7</i> T	449686	4762135	29
Adelaide Wind Farm	2016	17	Catharus fuscescens	VEER	thawed	1 <i>7</i> T	444495	4765069	10
Adelaide Wind Farm	2016	22	Lariurus cinereus	LACI	thawed	1 <i>7</i> T	438296	4763207	10
Adelaide Wind Farm	2016	6	Regulus satrapa	GCKI	thawed	1 <i>7</i> T	451990	4762592	18
Adelaide Wind Farm	2016	12	Scolopax minor	AMWO	thawed	1 <i>7</i> T	447891	4763369	18
Adelaide Wind Farm	2016	27	Lariurus cinereus	LACI	thawed	1 <i>7</i> T	435970	4765491	27
Adelaide Wind Farm	2016	6	Lariurus cinereus	LACI	thawed	1 <i>7</i> T	451976	4762569	46
Adelaide Wind Farm	2016	11	Accipiter striatus	SSHA	thawed	1 <i>7</i> T	449156	4763595	24
Adelaide Wind Farm	2016	14	Acanthis flammea	CORE	thawed	1 <i>7</i> T	447166	4764852	2
Adelaide Wind Farm	2016	22	Lariurus cinereus	LACI	thawed	1 <i>7</i> T	438325	4763197	20
Adelaide Wind Farm	2016	19	Lariurus cinereus	LACI	thawed	1 <i>7</i> T	442951	4764968	0
Adelaide Wind Farm	2016	12	Spizella passerina	CHSP	thawed	1 <i>7</i> T	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	Ν	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	Ν	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



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

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 2016	27	15 25	Summer Summer	August	8/15/2016 8/24/2016	Bat sp.	N/A N/A	N/A N/A	Thawed	17	435960 451976
Adelaide Wind Farm	2016	6			August		Kinglet sp.	N/A N/A		Thawed	17	449661
Adelaide Wind Farm	2016		25	Summer	August	8/24/2016	Bat sp.	· · ·	N/A	Thawed		449661 442986
Adelaide Wind Farm	2016	<u>19</u> 22	25 25	Summer	August	8/24/2016 8/24/2016	Gray Catbird	Dumetella carolinensis	GRCA	Thawed	17 17	438301
Adelaide Wind Farm				Summer	August		Kinglet sp.	N/A	N/A	Thawed		
Adelaide Wind Farm Adelaide Wind Farm	2016 2016	27	25	Summer Fall	August September	8/24/2016 9/7/2016	Kinglet sp. Raptor sp.	N/A N/A	N/A N/A	Thawed Thawed	17	435963 449668
Adelaide Wind Farm		12	7	Fall	September	9/7/2016	Bird sp.	N/A N/A	N/A N/A	Thawed	17	447862
Adelaide Wind Farm		12	7	Fall	September	9/7/2016	Bird sp.	N/A N/A	N/A N/A	Thawed	17	447155
Adelaide Wind Farm		17	7	Fall	September	9/7/2016	Bat sp.	N/A	N/A N/A	Thawed	17	4447133
Adelaide Wind Farm		20	7	Fall	September	9/7/2016	Bat sp.	N/A	N/A	Thawed	17	444322 440255
Adelaide Wind Farm		14	21	Fall	September	9/21/2016	Raptor sp.	N/A	N/A N/A	Thawed	17	440255
Adelaide Wind Farm		17	21	Fall	September	9/21/2016	Bat sp.	N/A	N/A	Thawed	17	444505
Adelaide Wind Farm		19	21	Fall	September	9/21/2016	Bat sp.	N/A	N/A	Thawed	17	442985
Adelaide Wind Farm		22	21	Fall	September	9/21/2016	Bat sp.	N/A	N/A	Thawed	17	438316
Adelaide Wind Farm		27	21	Fall	September	9/21/2016	Bird sp.	N/A	N/A	Thawed	17	435981
Adelaide Wind Farm		7	5	Fall	October	10/5/2016	Bat sp.	N/A	N/A	Thawed	17	449685
Adelaide Wind Farm		11	5	Fall	October	10/5/2016	Bird sp.	N/A	N/A	Thawed	17	449150
Adelaide Wind Farm		12	5	Fall	October	10/5/2016	Bat sp.	N/A	N/A	Thawed	17	447854
Adelaide Wind Farm		14	5	Fall	October	10/5/2016	Bird sp.	N/A	N/A	Thawed	17	447154
Adelaide Wind Farm		17	5	Fall	October	10/5/2016	Raptor sp.	N/A	N/A	Thawed	17	444493
Adelaide Wind Farm		17	19	Fall	October	10/19/2016	Bat sp.	N/A	N/A	Thawed	17	444526
Adelaide Wind Farm		19	19	Fall	October	10/19/2016	Bird sp.	N/A	N/A	Thawed	17	442956
Adelaide Wind Farm		20	19	Fall	October	10/19/2016	Raptor sp.	N/A	N/A	Thawed	17	440240
Adelaide Wind Farm		22	19	Fall	October	10/19/2016	Bat sp.	N/A	N/A	Thawed	17	438310
Adelaide Wind Farm		27	19	Fall	October	10/19/2016	Bat sp.	N/A	N/A	Thawed	17	435962
						., .,_0.0					1	



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		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		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		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		22	September	Cloudy, 26°C	no	26	September
Adelaide Wind Farm 2016	17	4765067	3	W		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	<u> </u>	W	1	22	September	Cloudy, 26°C	yes	26	September
Adelaide Wind Farm 2016	27	4765469	20	NE	2	22	September	Cloudy, 26°C	no	26	September
Adelaide Wind Farm 2016	7	4762146	25	W	-	6	October	Sunny, 22°C	yes	11	October
Adelaide Wind Farm 2016	11	4763613	14	N W	2	6	October	Sunny, 22°C	no	11	October
Adelaide Wind Farm2016Adelaide Wind Farm2016	12	4763361 4764845	6		1	6	October	Sunny, 22°C	no	11	October October
Adelaide Wind Farm 2016 Adelaide Wind Farm 2016	14	4764845 4765082	15 15	W E	2	6	October October	Sunny, 22°C	no	11	October
	17	4765082 4765087	15		2	<u> </u>		Sunny, 22°C	yes	24	
Adelaide Wind Farm 2016		4764959	9	SE S	<u>∠</u>	20	October	Rain, 13°C	no	24	October
Adelaide Wind Farm 2016 Adelaide Wind Farm 2016	19 20	4764959 4765239	12	NW	2	20	October	Rain, 13°C	no	24	October
	20	4765239 4763207	1		1	20	October	Rain, 13°C Rain, 13°C	no	24	October
	22		15	N S	2	20	October		no	24	October
Adelaide Wind Farm 2016	۷/	4765462	15	3	Z	20	October	Rain, 13°C	no	24	October



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	Мау	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	Мау	Clear	yes
Adelaide Wind Farm	2016	11	Clear	no	26	May	Overcast	no	30	Мау	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	ves
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	ves	8	August	Partly cloudy	yes
Adelaide Wind Farm	2016	20	Fair	yes	4	August	Few clouds	ves	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	12	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	ves	20	September	Sunny, 26°C	yes
Adelaide Wind Farm		12	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 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	2018	19	Rain, 17°C	no	29	September	Rain, 16°C	no	3	October	Cloudy, 20 C Cloudy, 20°C	yes
Adelaide Wind Farm	2018	22	Rain, 17°C	yes	29	September	Rain, 16°C	yes	3	October	Cloudy, 20 C Cloudy, 20°C	,
Adelaide Wind Farm	2016	22	Rain, 17°C	yes	29	September	Rain, 16°C	yes	3	October	Cloudy, 20°C Cloudy, 20°C	yes
Adelaide Wind Farm	2016	7	Cloudy, 17°C	1	13	October	Cloudy, 11°C	yes	17	October	Sunny, 22°C	yes
Adelaide Wind Farm	2016	11	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	· · · · · · · · · · · · · · · · · · ·	17	October	Sunny, 22°C	yes
Adelaide Wind Farm	2016	12	Cloudy, 17°C Cloudy, 17°C	no	13	October	Cloudy, 11°C Cloudy, 11°C	no	17	October	Sunny, 22°C	no
				no			,	no				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 Adelaide Wind Farm	2016 2016	22	Rain, 9°C	no	27	October	Rain, 10°C	no		November	N/A	no
	· 7014	27	Rain, 9°C	yes	27	October	Rain, 10°C	yes	1 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	0.66666667
Adelaide Wind Farm	Subset	2016	Spring	small	5	6	22	May		0	0	0	0	0
Adelaide Wind Farm	Subset	2016	Spring	medium	5	6	20	May	1	1	1	0	0	0.66666667
Adelaide Wind Farm	Subset	2016	Spring	small	5	6	,	June	1			0	0	0.66666667
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		Î	0.75
Adelaide Wind Farm	Subset	2016	Spring	small	5	6	12	June	1	1	1		0	0.75
Adelaide Wind Farm	Subset	2016	Spring	small	5	6	14	June	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		0.75
Adelaide Wind Farm	Subset	2016	Spring	small	5	6	19	June	1		1	1	0	0.75
Adelaide Wind Farm	Subset	2016	Spring	medium	5	6	20	June	1		1	0	0	0.66666667
Adelaide Wind Farm	Subset	2016	Spring	small	5	6	22	June	1	1	1	1	0	0.75
Adelaide Wind Farm	Subset	2016 2016	Summer Summer	small	7	8	6	July July	1	1	1	1	0	0.75
Adelaide Wind Farm	Subset			large	7	8		/	1	1	1	0	-	
Adelaide Wind Farm	Subset	2016	Summer	small	7	8	12	July	1	1	1	0	0	0.66666667
Adelaide Wind Farm	Subset	2016 2016	Summer	medium	7	8	22 27	July	1	1	1	1	0	0.75
	Subset	2016	Summer	small	7	0 8	7	July July	1	1	1	1	1	1
Adelaide Wind Farm	Subset Subset	2016	<u>Summer</u> Summer	medium small	7	8	14	July	1	1	0	0	0	0.5
Adelaide Wind Farm	Subset	2018	Summer	small	7	8	14	July	1	1	0	0	0	0.5
Adelaide Wind Farm	Subset	2018	Summer	small	7	8	20	July	1	1	0	0	0	0.5
Adelaide Wind Farm	Subset	2018	Summer	small	7	8	20	July	1	1	0	0	0	1
Adelaide Wind Farm	Subset	2018	Summer	small	7	8	7	August	1	1	1	0	0	0.66666667
Adelaide Wind Farm	Subset	2018	Summer	small	7	8	12	August	1	1	1	1	1	1
Adelaide Wind Farm	Subset	2016	Summer	medium	7	8	12	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	0.66666667
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	0.66666667
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	r 1	1	1	1	1	1
Adelaide Wind Farm	Subset	2016	Fall	small	9	10	12	September		1	1	0	0	0.666666667
Adelaide Wind Farm	Subset	2016	Fall	small	9	10	14	September		0	0	0	0	0
Adelaide Wind Farm	Subset	2016	Fall	small	9	10	17	September		1	1	0	0	0.666666667
Adelaide Wind Farm	Subset	2016	Fall	small	9	10	20	September		1	1	1	1	1
Adelaide Wind Farm	Subset	2016	Fall	large	9	10	14	September		1	1	1	1	1
Adelaide Wind Farm	Subset	2016	Fall	small	9	10	17	September		0	0	0	0	0
Adelaide Wind Farm	Subset	2016	Fall	small	9	10	19	September		1	1	1	0	0.75
Adelaide Wind Farm	Subset	2016	Fall	small	9	10	22	September		0	0	0	0	0
Adelaide Wind Farm	Subset	2016	Fall	small	9	10	27	September		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	0.66666667
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]
Adelaide Wind Farm	Subset	2016	Fall	small	9	10	22	October	1	1	1	1	1]
Adelaide Wind Farm	Subset	2016	Fall	small	9	10	27	October	1	1	0	0	0	0.5



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



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		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	12	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	20	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	2018	06/02/16	6598	6598	7854
Adelaide Wind Farm	14	2	6	2018	06/02/16	5250	5250	7854
Adelaide Wind Farm	17	2	4	2018	06/02/16	7015	7015	7854
Adelaide Wind Farm	17	2	6	2016	06/02/16	7015	7013	7854
	17	<u>ک</u>	0	2010	00/02/10	/0J4	/ 0J4	/0J4



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	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



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



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	20	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	<u> </u>	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	12	2	8	2018	08/02/18	3000	3000	7854



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



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



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



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	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



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



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



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	Ν	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	Ν	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

ADELAIDE WIND POWER PROJECT: YEAR 2 POST-CONSTRUCTION WILDLIFE MONITORING REPORT (2016)

APPENDIX G: FIELD FORMS



ADELAIDE WIND POWER PROJECT: YEAR 2 POST-CONSTRUCTION WILDLIFE MONITORING REPORT (2016)

APPENDIX G1 FIELD FORMS (EEMP MORTALITY MONITORING)



1.1.3	Date: Mc IESTER: U	strae	DIT Field F	ect Name: Adelo Personnel: Na		lo.	_			% VEG.		VEC ≤ 15cm	G. HEIGI tall		BILITY CLASS*
				-	- N. WESS				H	25% bare		≤ 15cm			2 (Moderate)
W	eather -	5 19km	MIS_		\geq	O				≤ 25% bare	ground	≤ 25% >	30cm t	all Class 3	B (Difficult)
Cond	ditions: TEMP	5 19km (°C) (spee	WIND ed / direction)	CLOUD	PPT PPT (i	last 24-h	rs)		l	ittle/no bai	re ground	≥ 25% >	30cm t	all Class	(Very difficult)
lurbine	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed		UTM Coord	inates		osition turbine	Subst		'isibility Class*	Detected?	Scavenged
No.				1		Zone	Easting	Northing	Dist. (n	n) Direction			-		
20	0650	SOOPM	Amro -	hed	Althorn	67	=44020	N 4 76522	43	S	Soil		2	□-Y / 😰-N	0-Y / 0-N
					Thoward		E	Ν						□-Y / □-N	0-Y/0-N
	(-)				متليع	E	Ν		22, 21		a teret ja	ā ir a	□-Y / □-N	0-Y/0-N
		Ti			50 5 30		E	Ν						□-Y / □-N	0-Y/0-N
		X 0,25	brus 4r	sth cropp	Sau		E	N			12	6		□-Y / □-N	□-Y / □-N
		10					E	Ν						□-Y / □-N	0-Y/0-N
			-				E	Ν		1.5	1.192			□-Y / □-N	□-Y / □-N
7	Ores	NA	Silver Bit	te		17	E 444498	N 476500	97~	- Ne	Soil		1	Ø-Y/□-N	D-Y / -N
		2/					E	N						□-Y / □-N	□-Y / □-N
	-	Nº X	Roughind (not				E	N	11 2.1		1			□-Y / □-N	□-Y / □-N
		-n	- Web tost	v) [.]			E	Ν						□-Y / □-N	□-Y / □-N
0			not on pa	a but blw i	put E wheat		E	Ν	-		9997 I.A.			□-Y / □-N	□-Y / □-N
		1	0.25m	astquiteat.			E	N				1.714	-	□-Y / □-N	□-Y / □-N
Div.							E	N	224					□-Y / □-N	□-Y / □-N
							E	N	d only		11,813			□-Y / □-N	0-Y/0-N
12	0930	NIN	Ed Bat	ų	į¢	17	E244 7859	N 4763355	16	w	Soi	1	1	V-Y/ -N	□-Y / 🖉-N
		113	- A A A A A A A A A A A A A A A A A A A				E	N	10					□-Y / □-N	□-Y / □-N
	e dê novê	a					E	N						□-Y / □-N	0-Y/0-N
net one			just fl gow	load			E	N			61.1			□-Y / □-N	□-Y / □-N
10.00		11				6.11				-				6	

() Stantec			er Efficier ord Form	
	Project No: 160961067 Date: MCUM TESTER: SUM		ct Name: Addersonnel:		
	Weather <u>5</u> Conditions: TEMP (°C)	15 / NE WIND (speed / direction)	<u>5º/a</u>	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)

No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed		UTM Coord	inates		ition urbine	Substrate	Visibility Class*	Detected?	Scavenged
		Collected	O Orchause		Irozen/Inawea	Zone	Easting	Northing	Dist. (m)	Direction	NET PEC	-	- The Barry	
11 8	8:27	/	eastern reabat	thread	frozen	17T	E 449157	N4763610	13	SE	road	1	□-Y / 🗡-N	X-Y/□-N
198	3:40	/	small bird	thread	frozen	17T	E442931	N4976496	716	WNW	5011	1	X-Y / □-N	□-Y / 🕵-N
22 8	3:54	/	silver haired	thread	frozen	IT	E438286	N4763222	27	NW	tilled	2	□-Y / 🔟-N	₩-Y/□-N
							E	Ν			2011		□-Y / □-N	0-Y/0-N
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Proje	Date: M		12016 Field F	ect Name: Adele Personnel: N		ille	-	-61	1	% VEG. 0	OVER	VEG. HEIGH	IT VISIE	BILITY CLASS*
1.1	TESTER: <u>SC</u>	un lsoel	in						2	90% bare g	ground ≤1	15cm tall	Class 1	(Easy)
	0	0 10	SE		0 1. 1				2	25% bare g	ground ≤1	15cm tall	Class 2	(Moderate)
w	eather ditions: TEMP	0 10	JIJE_	<u> </u>		htra			5	25% bare g	pround ≤2	25% > 30cm to	all Class 3	(Difficult)
Con	ditions: ^{TEMP}	(°C) (spee	WIND ed / direction)	CLOUD	ррт ррту	ast 24-hr	rs)		Lit	tle/no bar	e ground ≥ 2	25% > 30cm to	all Class 4	(Very difficult)
Turbine No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed		UTM Coord		from	sition turbine	Substrate	e Visibility Class*	Detected?	Scavenged?
Ca	8:50	1	rod land	(Charan	F	Zone	Easting	Northing	100-00 US	Direction	wheat			MY CON
6			reabat	Fagur	trozen	171	=451970	4762611	5	NW		·	□-Y / X-N	X-Y / □-N
14	9:05	4:05	bird	Sticker	frozen	177	E447143	N4764868	127	NW	dead	2	□-Y / X-N	□-Y / ¥-N
	9:15		hoary	Un alle	Francia	177	E444504	N4765075	T	NW	soil		X-Y / □-N	D-Y/XN
FI	1115		bat		TOTEL	1.11	11121	1100010	1	IVVV	2011		(18)/	
F	1/15		(Oat)	+age	frozen		E	N		1010	3011		□-Y / □-N	

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FORM 019 / REV: 2016-05-10

Stantec		her Effici cord For	and the second se	T-7 T		weed j	F
Project No: 160961067 Date: June 2, 2016 TESTER: Annu Comgan	Project Name: Ad		nd Farm	in in in in in it.	% VEG. COVER	VEG. HEIGHT	
TESTER: Anna Comagn					≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
		~		-> beside orange	≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
Weather 18C 1km/4 1	SF GOX	Ø	Rain	cylinder	≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Weather 10 Conditions: TEMP (°C) 1 km / h / j Conditions: TEMP (°C) WIND (speed / direct)	CLOUD	PPT	PPT (last 24-hrs)	-1	Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed		UTM Coord	inates		ittion turbine	Substrate	Visibility Class*	Detected?	Scavenged?
NO.		1				Zone	Easting	Northing		Direction		-		
7	7:45am.	4:30pm	AMRO	Millite Tag	Thawled	17	0449628	N4762156	22	WNW	Dirt			0-Y / 02-N
2				J			E	N					□-Y / □-N	□-Y / □-N
17	8:10am	n/a	LACI	Thread	Thawed	17	E0444500	N 4765056	4	NW	Weeds	2	00-Y/□-N	
i N si						5.7	E	N		1.07	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	3.15	□-Y / □-N	□-Y / □-N
27	8:30an	N/a	Rose-Breasted	Where Tay	Thankel	17	E0436009	N4765474	45	E	Gravel	1		
			Grosbeak	5	-		E	Ν					□-Y / □-N	□-Y/ℓ
a						1.	E	N					□-Y / □-N	□-Y / □-N
	6						E	Ν			Sale and		□-Y / □-N	□-Y / □-N
				1		- 5	E	N			1 - 1 -	14월 19 U	□-Y / □-N	□-Y/□-N
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							E	N				22.4	□-Y / □-N	□-Y / □-N
						ur u	E	N					□-Y / □-N	□-Y / □-N
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(field notes QA/QC personnel) FORM 019 / REV: 2016-06-01

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Stantec	Searcher Efficiency Record Form	T-IY	TO T-22 -> kesule T-20 TO a large my liss ide TO weed chaccess round			
Project No: 160961067 Date: June 6 , 2016	Project Name: Adelaide Wind Farm Field Personnel: Nash Celuille		% VEG. COVER	VEG. HEIGHT		
TESTER: Anna Corrigan		-> light of tubine	≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)	
		at the edge of	≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)	
Wasther 17°C 16km/h/	N Q O Thunderstorms	gravel	≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)	
Conditions: TEMP (°C) WIND (speed / directi	CLOUD PPT PPT (last 24-hrs)	Ö	Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)	

Turbine No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed	7	UTM Coord		from	sition turbine	Substrate	Visibility Class*	Detected?	Scavenged?
14	8:25 an	3:00	Hoary Bat	Thread	Thawed	Zone 17	Easting E0447176	Northing N4764854	Dist. (m) Direction	Weeds	2		0-Y/02-N
	0	- Wit	(may -n	Incord			E	N	No	- Change - C	Marca - S		□-Y / □-N	□-Y / □-N
22	8.45 am	n/a	Blue Jay	Tay Company	Thaved	17	E0438324	4763203		SE	dut	- 1	□-Y/□-N	-Y/02-N
							E	N					□-Y / □-N	□-Y / □-N
20	9:00am	n/9	White- throated	Tay	Thawed	17	E0440210	N4765225	46	W	gravel	1	Ø-Y / □-N	□-Y/02-N
			Sparrow				E	N			0		□-Y / □-N	□-Y / □-N
						4	E	N					□-Y / □-N	□-Y / □-N
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	ect No: 1609 Date: 1	1067 une 13, am 50	2016 Field F	ct Name: Adela	rd Form aide Wind Farm	lle) [% VEG. 0		VEG. HEIG	HT VISII Class 1	BILITY CLASS*
								サけ		25% bare (icm tall		(Moderate)
w	eather 15	5 15	, SW	30% N	Jone N	lone				25% bare (% > 30cm		(Difficult)
Con	eather ditions: TEMP	(°C) (spe	WIND ed / direction)	CLOUD	РРТ РРТ (last 24-h	irs)		Lii	itle/no bar	e ground ≥ 25	5% > 30cm i	tall Class 4	(Very difficult)
iurbine No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed		UTM Coord		from	sition turbine	Substrate	Visibility Class*	Detected?	Scavenged
			grey+white bird	-4-		Zone				Direction		-		MY ID N
17	8:45	N/A	bird Eastern		thawed	ITT		N 4765102		N	Soy	2		X-Y/N
19	9:00	N/A	Eastern red bat	tap	thawed	ITT	-442435	×4764957		SW	50 y tirt		X -Y/□-N	□-Y / X-N
22	9:15	N/A	Bigbrown	tap	thawed	177	E438321	N4763192	313	NW	gravel	;	X-Y/ -N	□-Y / X-N
			bot				E	Ν			road)	□-Y / □-N	D-Y/
	i - Car			«			E	N		M. A. Saval	에서 공장구성	7 1 2 45	□-Y / □-N	□-Y / □-N
							E	Ν					□-Y / □-N	0-Y/0-N
	7	del a constante		Man And			E	Ν		1 State			□-Y / □-N	□-Y / □-N
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Project No: 160961067 Date: Junc 16, 2016 TESTER: Sam Sochn Weather IG 15 / NW 90% None Rain Conditions: TEMP (°C) IS / NW 90% None CLOUD CL	II Class 1 II Class 2 Docm tall Class 3 Docm tall Class 3 Docm tall Class 4 Ibility ass* Detected? Ibility Detected? Ibility Ibility Detected? Ibility	IBILITY CLASS* 1 (Easy) 2 (Moderate) 3 (Difficult) 4 (Very difficult) 4 (Very difficult) Scavenged P.Y / X-N
TESTER: Sam Soehn Weather IG 15 / NW 90% bare ground \$ 15cm tall 25% bare ground \$ 15cm tall 25% bare ground \$ 25% soc 25% bare ground \$ 25% soc 11% ba	II Class 1 II Class 2 Dorm tall Class 3 Dorm tall Class 4 Ibility Detected? Ibility Detected? Ibility Ibility Ibility Detected? Ibility Ibility Ibility Detected? Ibility Ibility Ibility Ibility <th>1 (Easy) 2 (Moderate) 3 (Difficult) 4 (Very difficult) 4 (Very difficult) 5 Scavenged -Y / K-N -Y / -N -Y / -N -Y / -N</th>	1 (Easy) 2 (Moderate) 3 (Difficult) 4 (Very difficult) 4 (Very difficult) 5 Scavenged -Y / K-N -Y / -N -Y / -N -Y / -N
Weather Conditions: TEMP (°C) 15 / NW 90% None Kain S25% bare ground \$25% bare ground	Dem tall Class 3 Dem tall Class 4 Class 4 Class 4 Detected? Detected? Class 4 Class 4 Clas 4 Clas 4 Clas 4 Class 4 Class 4 Clas 4 Clas 4 Clas 4 Clas 4	3 (Difficult) 4 (Very difficult) 7 Scavenged -Y / X-N X-Y / -N -Y / -N -Y / -N
Chunderstorm Shorty after SE placements Turbine No. Time Collected Species Marker Used Condition frozen/thaved UTM Coordinates Position from turbine Dist. (m) Direction Substrate Visib Class G 6:15 June 20 Bird tage thawed 17T Edsting Northing Dist. (m) Direction Substrate Visib Class 7 6:25 n/a Bird tage thawed 17T E451983 N4762616 4 NE Wleeds 2 7 6:25 n/a Bird tage thawed 17T< E491983	Dem tall Class 4	4 (Very difficult)
Time No. Time Collected Species Marker Used Condition frozen/thaved UTM Coordinates Position from turbine Dist. (m) Direction Substrate Visib Classing 6 6:15 JUNE 20 Bird tage thawed 17T Edsting Northing Dist. (m) Direction Substrate Visib Classing 7 6:25 n/a Bird tage thawed 17T E451983 N4762616 4 NE Wleeds 2 7 6:25 n/a Bird tage thawed 17T< E451983	Detected? 2 -Y X	Scavenged -Y / X-N Y-Y / -N -Y / X-N -Y / X-N -Y / X-N -Y / N-N
Time No. Time Placed Time Collected Species Marker Used Condition frozen/thawed UTM Coordinates Position from turbine Substrate Visib Classing G 6:15 Marker 20 Bird tap thawed 17T Edsing Northing Dist. (m) Direction Substrate Visib A 6:25 n/a Bird tap thawed 17T E451983 N4762616 4 NE Weeds 2 A 6:25 n/a Bird tap thawed 17T E449629 N4762180 45 NW Soy 2 II 6:35 Marker 20 Big brown tag thawed 17T E449148 N4762614 7 S weeds 2 II 6:35 Marker 20 Big brown tag thawed 17T E449148 N4763614 7 S weeds 2 II 6:35 Jun E20 Big brown tag thawed 17T E449148 N4763614 7 S weeds 2	ass* Derected ? 2 -Y X 2 -Y X 2 -Y X	□-Y / ¥N ▼-Y / □-N □-Y / Š-N □-Y / □-N
6 6:15 JUNE 20 Bird tap thawed 17T E451983 N4762616 4 NE Weeds 2 7 6:25 n/a Bird tap thawed 17T E449629 N4762180 45 NW soy 2 11 6:35 JUNE 20 Big brown tap thawed 17T E449629 N4762180 45 NW soy 2 11 6:35 JUNE 20 Big brown tap thawed 17T E449148 N4763614 7 S Weeds 2 Didn't search Thursday due to thuthderstorms, Searched Monday (June 20th) E N E N E N E N E N E N E N E N	2Y/X-N 2Y/X-X 2Y/X-N -Y/-N	X-Y / □-N □-Y / X-N □-Y / □-N
7 6:25 n/a Bird tap thawed 17T E449629 N4762180 45 NW Soy 2 11 6:35 JUNEZO Big brown tap thawed 17T E449148 N4763614 7 S weeds 2 II 6:35 JUNEZO Big brown tap thawed 17T E449148 N4763614 7 S weeds 2 II 6:35 JUNEZO Big brown tap thawed 17T E449148 N4763614 7 S weeds 2 II 6:35 JUNEZO Big brown tap thawed 17T E449148 N4763614 7 S weeds 2 II Didn't search Thursday due to thuhderstorms, E N E N E N E N E N E N E N E N E N E N E N E N E N E N E N E	2	X -Y / □-N □-Y / X -N □-Y / □-N
11 6:35 MONDAN BIG brown tag thawed 17T 449148 4763614 7 S weeds 2 Didn't search Thursday due to thuhderstorms, Searched Monday (June 20th) E N E N E N E N E N	2 -Y / -N	□-Y / X-N □-Y / □-N
Didn't search Thursday due to thuhderstorms, Searched Monday (June 20th) E N E N E N E N	□-Y / □-N	□-Y / □-N
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FORM 019 / REV: 2016-05-10

() Stantec	Searcher Efficiency Record Form
Project No: 160961067 Date: June 20, 2016 TESTER: Brenne Oberne	Project Name: Hole laide Windfarm Field Personnel: Nash Cohille
Weather 18 -26 10 2 / N M Conditions: TEMP (°C) WIND (speed / direction)	V 50 0 0 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 Coord		from t	ition urbine	Substrate	Visibility Class*	Detected?	Scavenged?
14	8:22	NIA	E. Red Bat	grass	frozen	Zone 191	Easting E 0447246	Northing		Direction	sheeds	2	□-Y / 💒 N	X-Y/□-N
19	8:38	4:45	L	Threat	J.C.	1	E0442967	N4764983	25.6		Soil/needs			0-Y / N
22	08:52		PUMa	WALP Base	2			N 4763216		WW	Jon bon			Y/
	-		(state		<u>in</u> 1991	E	N			N N		D-Y / D-N	0-Y/0-N
			n loves Desi				E	N			bung bean	F.	□-Y / □-N	□-Y / □-N
						1.11	E	Ν			J		□-Y / □-N	□-Y / □-N
	5						E	N					□-Y / □-N	□-Y / □-N
					유민지원들		E	N					□-Y / □-N	0-Y/0-N
		S. M.					E	N					□-Y / □-N	⊡-Y/□-N
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	_						E	Ν					□-Y / □-N	0-Y/0-N
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() Stantec			cher Ef ecord	ficiency Form
Project No: 1609 (Date: June TESTER: Brenne	27, 276 27, 276	Project Name: Field Personnel:	Ade Nash	laige Colsike
Weather 278 Conditions: TEMP (°C)	S/ L WIND (speed / direction	1 15 CLOUD	O PPT	rain (al, the 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)

urbine No.	Time Placed	Time Collected	Species	free free free free free free free free	Condition frozen/thawed		UTM Coord	Rented and the	Posi from to	urbine	Substrate	Visibility	Detected?	Scavenged
-	19200	0. (1)	F			Zone		Northing	Dist. (m)	Direction		Class*	\sim	0
	07:58	NIA	bat	thrad	trour	171	E0449649	476 2134	15.1	Sw.	Soil/veg	2:	(A-N)	X-Y/D-N
	03:20	n/d	Ampo _	Mar top	foren	1	E 0447170	N 4764823	29.3	S	Grass	2	RY/D-N	0-Y/24-N
2	02:40	5:00	J. Boct	thread	For	4	E0438318	N 4763/9]	17.4	5	Beins			0-Y/X-N
							E	N					□-Y / □-N	0-Y/0-N
							E	N					□-Y / □-N	□-Y/□-N
							E	Ν					□-Y / □-N	0-Y/0-N
							E	N					□-Y / □-N	0-Y/0-N
							E	Ν					⊐-Y / ⊡-N	□-Y / □-N
							E	Ν					□-Y/□-N	□-Y / □-N
							E	N					⊐-Y/⊡-N	□-Y / □-N
							E	N		- 1]-Y/□-N	0-Y/0-N
							- -	N				0	∃-Y / □-N	□-Y / □-N
							E	N]-Y/[]-N	□-Y / □-N
						E		N				[]-Y / []-N	□-Y/□-N
			P			E		N		T		C]-Y/[]-N	□-Y / □-N
						E		N				C]-Y/□-N	□-Y / □-N
						E		1				C]-Y/[]-N	□-Y / □-N
						E		١]-Y/[]-N	□-Y / □-N
	<u> </u>					E	ľ	1				E]-Y/[]-N	□-Y / □-N

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(field notes QA/QC personnel) FORM 019 / REV: 2015-04-16

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() Stantec			cher Effici ecord For	
Project No: 14 Date: 7 TESTER: 7	09 6 106 7 July 4, 2016 renner Obern	Project Name: Field Personnel:	Ade la Nash	Chike
Weather Conditions: TEMP	(°C) / SC (°C) / WIND (speed / directio		6 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 Coord	inates		ition urbine	Substrate	Visibility	Detected?	Scavenged?
	Hacea	Conected	and a second second		II OZEN/ INGWEG	Zone	Easting	Northing		Direction		Class*		
7	07:55	1700	BLUJ	fathere	From	170	50449622	NO6762154	33.6	NW	SOIL/COKN	2		D-Y/XN
14	08:10	1715	Bat	Walking whispe shreed	Frozen	175	Eachtrich	14764827	30.7	Sw	SOIL	3	□-Y/12(-N	□-Y / 🕅-N
19	08:25	na allingo	Very	Grass	from	171	E0442485	N 4764936	46.4	SE	Grass	2	□-Y / X-N	X -Y / □-N
			1				E	N					□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N
							E	Ν					□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	0-Y / 0-N
							E	N					□-Y / □-N	0-Y/0-N
							E	N					□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N
							Ε	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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Stantec Consulting Ltd. 1 - 70 Southgate Drive, Guelph ON N1G 4P5	Searcher Efficiency Record Form	T-7	T-11 (T)	- T- 14	(T) P
Project No: 160961067 Date: July 11, 2016	Project Name: Adelaide Wind Turm Field Personnel: Nush Colville	- 1)	VEG. COVER	, VEG. HEIGHT	}
TESTER: Anna Corrigen		->3 steps north	≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
		UF STAILS	≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
Weather 19-21 8k./h SE	951 0 0		≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Conditions: TEMP (°C) WIND	CLOUD PPT PPT (last 24-h	s)	Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Time	Time Collected	Species	Marker Used	Condition		UTM Coord	inates		ition turbine	Substrate	Visibility	Detected?	Scavenged?
NO.	Placed	Collected	-		frozen/thawed	Zone	Easting	Northing	Dist. (m)	Direction		Class*		
T-7_	8:20an	N/a	LAND	Thread	Thawed	1	0449658	4762152	4	NWW	weeds	2	□ / / □-N	
									·				□-Y / □-N	□-Y / □-N
1-11	8:30 um	n/a	ROPI	Thread	Thawed	l7	0449184	4763610	38	ESE	aruvel	1	₩Y/□-N	□-Y / ⊡~N
							•				3		□-Y / □-N	0-Y/0-N
T-14	8:4Sum	n/a	LACI	Thread	Thawed	17	0447176	4764830	24	S	gravel		□ / / □-N	
	<u>`</u>										3		□-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
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(field notes QA/QC personnel) FORM 019 / REV: 2014-05-02

Stantec	Searcher Efficiency Record Form	\frown	T-19 ->kside TZ an old pik flag TB	T-12	P - on typ P of large P rock
Project No: 160961067 Date: July 21, 2016	Project Name: Adelaide Wind Farm Field Personnel: Anna Corrigan testing		% VEG. COVER	VEG. HEIGHT	7
TESTER: A. Cottingen	Akish Columbia	-	≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
•		- 11	≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
Warman 18°C S-8km/h/ S	IOX Ø		≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Weather 18°C <u>S-8km/h / S</u> Conditions: TEMP (°C) WIND (speed / direction	CLOUD PPT PPT (last 24-hm	-> by a yellow post	Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Time	Time Collected	Species	Marker Used	Condition		UTM Coord	linates		ition urbine	Substrate	Visibility Class*	Detected?	Scavenged?
NO.	Placed	Collected			frozen/thawed	Zone	Easting	Northing	Dist. (m)	Direction		Cluss		
6	7:10am	n/a	GRCA	Thread	Thawed	17	E0451938	N4762715	4	W	weeds / divit	2	Ø-Y/□-N	D-Y / D-N
							E	N					□-Y / □-N	□-Y / □-N
19	7:30ar	n/a	BAOR	Contract Contract	Thawed	17	E 0442988	N 4764976	40	ENE	dixt	1	Ø-Y/□-N	□-Y / 🗹-N
				LoThread			E	N	2.34L6.				□-Y / □-N	□-Y / □-N
12	7: 45 am	n/a	LACI	Phread	Thawed	17	E 0447849	N 4763363	24	WNW	lock	1	Ø-Y/□-N	0-Y/0-N
1.1.1	fields and						E	N					□-Y / □-N	□-Y / □-N
đ		1141					E	N					□-Y / □-N	□-Y / □-N
	- de la						E	N					□-Y / □-N	□-Y / □-N
21 - N						n Gw	E	N				13.31	□-Y / □-N	□-Y / □-N
							E	N				16.24	□-Y / □-N	□-Y / □-N
	- mi - 1				di Kata ing		E	N					□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N
1. 14		6.0825					E	N		- 19			□-Y / □-N	□-Y / □-N
							Ε	N					□-Y / □-N	□-Y / □-N
_	13	-3	2. ³ 8. 1991	15 Z.S.S.		t 1	E	N					□-Y / □-N	□-Y / □-N
						HP (E	N					□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N
				2.2			E	N					□-Y / □-N	□-Y / □-N

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	Date: Ju	096106	b Field	the second s	lebrol	-	0			% VEG. (≥ 90% bare g	and the loss to which in the second	V ≤ 15cr	/EG. HEIG I	HT VISI Class 1	BILITY CLASS*
		strau	5		Nasico		<u>v</u> .		t	≥ 25% bare g		≤ 15cr			(Moderate)
Wee	ather_18	3 5	NE_		<u>) ƙ</u>	ain	2		-	≤ 25% bare ç		≤ 25%	> 30cm t		(Difficult)
Condi	ather 10 tions: TEMP	(°C) (spe	WIND ed / direction)			(last 24-hi	s)			Little/no bar	e ground	≥ 25%	> 30cm t	all Class 4	(Very difficul
bine lo.	Time Placed	Time Collected	Species	Marker Used	Condition	1	UTM Coordin		fron	osition n turbine	Subst	rate	Visibility Class*	Detected?	Scavenge
1 .	2.10		GRCA	thrand .	<u>r</u>	Zone	Easting EUU964	Northing I		m) Direction SW	Soi	1		Y/D-N	D-Y / 2-N
	7.10	NA			trozen	11	E	N	20	5 500	301	•			
			3m edo		se" pad		E	N			en la sub-		1.05 0.44		
			Sh yas	of corner	·b grave	pao	E	A A	-		tcha				
	2				· · ·		E	v gravel		1soy'	J			□-Y/□-N	
	ALC	NA	L'ACI	1.00	for	(7	E	N		JØ.				□-Y / □-N	
+ :	175		En Cal	Rype	tran	17	E	N					*************************************	□-Y / □-N	□-Y / □-N
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	4	TE		what	rbire	+	E 444508	476505	DI I	15	Veg		2		D-Y/DAN
		7			gle nowh	al	E	1 10000			C			□-Y / □-N	0-Y/0-N
1					photo		E	N						□-Y / □-N	□-Y / □-N
	•						E	epaol.						□-Y / □-N	□-Y / □-N
				Un W	of correrd	hace	Es squar	N N						□-Y / □-N	0-Y/0-N
1 -	255	NIA	GRCA	tag	u	17	E447151	476484	12	IWSW	Sail		1	G-Y/ []-N	D-Y/D-N
	in a	40		- S		- X	E P	4	1-	, ,				□-Y / □-N	□-Y / □-N
			A				E P	4	2					□-Y / □-N	0-Y/0-N
	spa	150 50 Y					E P	4						□-Y / □-N	□-Y / □-N
	C						E P	1						□-Y / □-N	□-Y / □-N
				3	Constanting of the second	- SAL	E	1			and the state			□-Y / □-N	□-Y / □-N

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() Stantec	Searcher Efficiency Record Form	T-17
Project No: 160961067 Date: Au 8, 2016 TESTER: Ama Corrigon	Project Name: Adelaide Wind Farm Field Personnel: Nash Colville	
Weather 17-19 4-5 / Conditions: TEMP (°C) (speed / dire		hrs)

-20 (T)	7-27	P
7 -10	Ð	
% 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 tali	Class 4 (Very difficult

Turbine No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed		UTM Coord	and the second	from	ition turbine	Substrate	Visibility Class*	Detected?	Scavenged?
1			HOLA	1 1 1		Zone	Easting	Northing		Direction	1 K - F			
17	8:15 am	17:30	HOLA	Thread	Thawed	17	0444514	4765068	5	E	short veg			-
	al-telana		0.001							-			□-Y / □-N	□-Y / □-N
20	8:300m	n/a	CEDW	11	Thawed	17	E0440241	4765210	19	SW	grass	2	፼-Y/□-N	
		= 151					E	Ν			5	-	□-Y / □-N	□-Y / □-N
27	8:50am	nia	LABO		Thuwed	17	E0436002	N4765466	42	ESE	grass	2	⊡- Y/□-N	D-Y / D-N
				20427			E	Ν			0		□-Y / □-N	□-Y / □-N
							E	Ν					□-Y / □-N	□-Y / □-N
							E	Ν					□-Y / □-N	□-Y / □-N
							E	Ν					□-Y / □-N	□-Y / □-N
							E	Ν			Linun wurp		□-Y / □-N	□-Y / □-N
				1 Carlos			E	Ν			Shine Torre		□-Y / □-N	□-Y / □-N
							Ε	N					□-Y / □-N	□-Y / □-N
							E	Ν					□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N
	13						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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		11/16 Nu Convigu <u>eC</u> 3/41 (°C)	Field		sh Culville	testing Ba asi 24-hi	- 114		2	% VEG. 90% bare 25% bare 25% bare	ground ground ground	VEG. HEIGI ≤ 15cm tall ≤ 15cm tall ≤ 25% > 30cm t		Class Class all Class	I (Easy) 2 (Moderate) 3 (Difficult)	
Con furbine No.	Time Placed	(spe Time Collected	ed / direction) Species		Condition frozen/thawed		UTM Coord		Po	sition	Subst		> 30cm t		4 (Very difficult) Scavenged	
6	8.20am		LACI	Black Thread	1 .	Zone	Easting	Northing	0.) Direction		À L	1	□-Y / 🕵-N	SK-Y/□-N	
	D. allam	nla	CACI	Dlack Inread	Inawca	11	0451998 E	N 4762594	AI	SE	Moweel	What			0-Y/0-N	
u	8.35am	nla	LAND	Bluck Thread	Themed	17	E0449190	N4763624	40	W	dirt			□-Y / X -N	₩-Y/□-N	
			0	Cause III - M	1 00000		E	N			Dev			□-Y / □-N	□-Y / □-N	
12	8.50am	W/A	SAVS	Bluck Thread	Thanked	17	E0447883	N4763564	6	NE	gravel		1	□-Y / 🕱-N	Ø-Y/□-N	
		1. 196					E	N			June	22		□-Y / □-N	□-Y / □-N	
						2.4	E	N						□-Y / □-N	□-Y / □-N	
		1			Sector		E	N					-	□-Y / □-N	□-Y / □-N	
							E	N						□-Y / □-N	□-Y / □-N	
	÷.,						E	N						□-Y / □-N	□-Y / □-N	
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							E	N			Commit Official			□-Y / □-N	□-Y / □-N	

() Stantec	T-20 ficiency Form
Project No: 160961067 Date: Aug 18, 2016 TESTER: Annu Corrigan	Wind Farm
Weather 20 2km/h / Conditions: TEMP (°C) WINE	Thunderstorms /Fog PPT (last 24-hrs)

T-22	; T-27	En la
		VISIBILITY CLASS*
1		
≥ 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		-		
20	8.15am	n/a	AMRO	AND They	Thawed	17	E0440259	N 4765236	8	NE	grass	2	004Y/□-N	
1.00				1. 5			E	Ν			0		□-Y / □-N	□-Y / □-N
22	8:350 m	15:45	BCKI	Viente Tay	Thouved	17	E0438316	N4763 208	1	E	gravel	1		0-Y / 0-N
							E	N			0		□-Y / □-N	□-Y / □-N
27 8	8:55 am	N1a.	LAND	Welge Thread	Thawed	17	E0435980	N 4765479	23	NE	dirt		₽-Y/□-N	
							E	N					□-Y / □-N	□-Y / □-N
	a gi na						E	N	-				□-Y / □-N	□-Y / □-N
					Seigne 3		E	N					□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N
						T DC	E	N					⊡-Y / □-N	□-Y / □-N
						Pirt I	E	N					□-Y / □-N	□-Y / □-N
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		Ancie					E	N					□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N

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	Ct No: 1609 Date: Aug		Field	ect Name: Adela Personnel: Anna			_	$[\otimes]$		% VEG. 0		/EG. HEIG m tall		BILITY CLASS* (Easy)
						the .		T	-	25% bare ((Moderate)
W	eather <u>13-</u> ditions: TEMP	16°C 5 Km	WIND ed / direction)	50 /. CLOUD	PPT PPT (I	ast 24-hi	ny fuin.	2011 		25% bare ç tle/no bar	ground ≤ 25% e ground ≥ 25%	> 30cm t		(Difficult) (Very difficult)
Turbine No.	Time Placed	Time	Species	Marker Used	Condition frozen/thawed	Zone	UTM Coord		from	iltion turbine	Substrate	Visibility Class*	Detected?	Scavenged?
11	8:15 am	4:30pm	LACI	When Threed	Frozen		Easting E 0449163	Northing N 4763607		Direction			D-Y/ -N	0-Y/02-N
	0.10 mm	1 - pm	LAG	YANNAL IMACA	(I Con		E	N	uv	01	gravel		0-Y/0-N	0-Y/0-N
12	8:25 aga	Ara	RTHA	Rige Thread	E	17	E 6447824-	N4763363	48	W	Gravel	1-	D-Y/ W-N	D-Y/DAN
for	0. NJ NA		ПІНА	ISLUGE ITVAN	THEN		E	N	10		J		□-Y / □-N	□-Y / □-N
22	8:45an	4:45pm	LACI	Millin Thread	Faren	17	E0438308	N 4763216	3	NW	werds	2	D-Y / W-N	□-Y / 🗹-N
			UNCL		11000		E	N					□-Y / □-N	□-Y / □-N
	οĒ.						E	N					□-Y / □-N	0-Y/0-N
							E	N					□-Y / □-N	□-Y / □-N
							E	N				109 182	□-Y / □-N	□-Y / □-N
L>	Nash	was u	nuble to	Survey	this fu	bine	E becaus	re ut.	Man	tenas	nex		□-Y / □-N	□-Y / □-N
				12001	,,,,,,,,,,,	_	E	N					0-Y/0-N	□-Y / □-N
							E	N		1.0			□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N
							E	N	-11 (Ye ¹)				□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N
	_		ên sî ⁿ si				E	N					□-Y / □-N	□-Y / □-N
							E	Ν					□-Y / □-N	□-Y / □-N
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Stantec	Searcher Efficiency Record Form	T-7 (T)	T-6 (T)		3
Project No: 160961067 Date: Avy 29/16	Project Name: Adelaide Wind Farm Field Personnel: Nash Calv. Ne		% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
TESTER: Anna Currigan			≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
0			≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
Weather 18°C Gim/h /	N 5% 8 tog		≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Weather <u>IDC</u> Conditions: TEMP (°C) WIND		nrs)	Little/no bare ground	I ≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine No.	Time Placed	Time Collected	Species	Marker Used	Condition frozen/thawed		UTM Coord		from	ition urbine	Substrate	Visibility Class*	Detected?	Scavenged?
	Huceu	Collected			inozenij indwed	Zone		Northing	Dist. (m)	Direction				
7	7:40 am	N/a	RTHA	Thread	Frozen	17	69449633	N4762198	29	W	gravel		128-Y/□-N	□-Y / @~N
						1.2	E	N					□-Y / □-N	□-Y / □-N
6	7:55 am	n/a	LACI	Thread	Fruzen	17	5951980	N 4762596	15	SW	grass	2	₽-Y / □-N	□-Y / 🗷-N
	and and		L. Antes III				E	N			5		□-Y / □-N	□-Y / □-N
11	8:05am	n/a	LACI	Thread	Frozen	17	E0449190	N 4763612	48	E	gravel	1	₽-Y / □-N	0-Y/12-N
-							E	N			5		□-Y / □-N	□-Y / □-N
2				land ² -14	이 전 문 이 가 있는 것이 같이 같이 하는 것이 같이 하는 것이 않아. 이 하는 것이 않아. 않아, 것이 하는 것이 하는 것이 하는 것이 않아. 않아, 것이 하는 것이 하		E	N		19. N.V.	- y 12		□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N
18 11							E	N		1.222			□-Y / □-N	□-Y / □-N
	un – Tura						E	N					□-Y / □-N	D-Y / 🗆-N
	- II						E	Ν					□-Y / □-N	□-Y / □-N
	HIC .						E	N			2 ¹⁴ 11		□-Y / □-N	□-Y / □-N
			n an				E	N		<u>_</u>	na ana a		□-Y / □-N	□-Y / □-N
122							E	Ν					□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N
			- 54				E	Ν					□-Y / □-N	□-Y / □-N
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(speed / direction)

Stantec		cher Effic ecord Foi		T-12
Project No: 160961067 Date: Supt 12, 2016 TESTER: Annu Contigen	Project Name: Field Personnel:		nd Farm	
Weather <u>a</u> <u>3.5 / Wh 1 S</u> Conditions: TEMP (°C) WIND (speed / direction	20%. CLOUD	Ø PPT	PPT (last 24-hrs)	

-1' <u>T</u>	: T-27	බ
OT	: (*
()		
% 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 Coord	linates		sition turbine	Substrate	Visibility Class*	Detected?	Scavenged
NO.	Placea	Collected			rozen/mawea	Zone	Easting	Northing		Direction	A	Cluss		
12	8:00am	na	Hoary Bat	Thread	Thoward	17	5447866	N4763368	15	NW	grave1	1	E-Y / D-N	
	2018						E	N		Thursday.	9		□-Y / □-N	□-Y / □-N
17	8:15am	6:00pm	Savanah Sparrow	Willia Tay	Thawed	17	6444522	N4765050	20	SE	gruss	2		
			-1		a de herios		E	N			3		0-Y/0-N	□-Y / □-N
27	8:30 am	5:450m	Harry Bat	Thread	Thoused	17	E 0435961 F	N 4765 470	6.25	W	Cement	1		D-Y / 2-N
		U					E	N					□-Y / □-N	□-Y / □-N
		1 BU - 148					E	N					□-Y / □-N	□-Y / □-N
	e de la composition de la comp						E	N					□-Y / □-N	□-Y / □-N
						Wige Wige	E	N					□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N
2					logger " Troub		E	N			ites a h		□-Y / □-N	0-Y/0-N
							E	N					□-Y / □-N	□-Y / □-N
							E	N			and a sector		□-Y / □-N	□-Y / □-N
						11.71	E	N	in term	- 10		8.20	□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N
_						2 11 2	E	N			he ^{tt}		⊡-Y / □-N	□-Y / □-N
				100			E	N				1.50	□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N
	n poli		ferv _{ice} to by	ka Ulanki	19		E	N	niv m				□-Y / □-N	□-Y / □-N

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Stantec	Searcher Efficiency Record Form	T-106) ; T-14	(P)
Project No: 160961067 Date: Sept 15/(6	Field Personnel: Dan Dilario		% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
TESTER: Anna Cassiyan		7 6	≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
			≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
Wather 13°C 9km/h 1	F <u>31.</u> Ø Ø		≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Weather 15C MIND Conditions: TEMP (°C) WIND	CLOUD PPT PPT (last 24-h	(2)	Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine	Time	Time	Species	Marker Used	Condition frozen/thawed		UTM Coord	linates		iition turbine	Substrate	Visibility Class*	Detected?	Scavenged?
No.	Placed	Collected			liozen/indwed	Zone	Easting	Northing	Dist. (m)	Direction				
10 6	8.10am	n/a	LACI	Thread	Thanked	17	8451993	N 4762598	20	SE	grass	2	₽ - Y / □-N	
							E	N			3		□-Y / □-N	□-Y / □-N
11	8:25am	na	Wilson's Warbler	. Thread	Thawed	17	E0449152	N4763625	1	N	gravel	1	<u>□</u> -Y / □-N	□-Y / 12-N
		*****					E	N			3	. 91.31	□-Y / □-N	□-Y / □-N
19	8:40am	NIA	Peregnne Falcon	Thread	Thawed	17	E0442979	N4764972	31	NE	weeds	2	19-Y/ 0-N	
			3				E	N					□-Y / □-N	□-Y / □-N
							E	N				E.	□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	0-Y/0-N
							E	N					□-Y / □-N	□-Y / □-N
							E	N		(Sec. 17		□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N
	***						E	N		1			□-Y / □-N	□-Y / □-N
						10	E	N					□-Y / □-N	□-Y / □-N
							E	N				- <u>19</u>	□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N
							Ε	N					□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y/□-N

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Stantec		cher Effic ecord Fo		T-7 (T)	1 T-14 (T)	T-20	(T)
Project No: 160961067 Date: Sept 22, 2016	Project Name: Field Personnel:			F@	veg. cover	VEG. HEIGHT	VISIBILITY CLASS*
Date: Sept 22, 2016 TESTER: Anna Corrigan		ion pila	<u></u>	Ly	≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
•					≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
Weather 14°C 4Ka/h 1	SE 20/	Fog	Ø		≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Conditions: TEMP (°C) With (speed / c		PPI	PPT (last 24-hrs)		Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine	Time	Time	Species	Marker Used	Condition		UTM Coord	inates		ition urbine	Substrate	Visibility Class*	Detected?	Scavenged
No.	Placed	Collected			frozen/thawed	Zone	Easting	Northing	Dist. (m)	Direction		Class*		
7	8:00am	17:00	Easkin Red But	Thread	Thanked	17	е 0449650	N 4762146	5	W	gravel/weeds	2	□-Y / 🔽-N	0-Y/22-N
	1						E	N			5		□-Y / □-N	□-Y / □-N
14	8:10 an	17:15	Hoary Bat	Thread	Tharved	17	E0447 169	N4764800	49	S	gravel	I	□-Y / 12-N	□-Y / 12-N
							E BM	N			3		□-Y / □-N	□-Y / □-N
20	8:25am	n/a	Yellow-Bellied	Thread	Thaved	17	E 0446242	N 4765220	14	SW	gravel	1	ĎУ-Y/□-N	D-Y / 12-N
			Supsucker				E	N			5		□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N
							E	N			a a . A 1 1 4 4 5 4 5 6 6 6 7 4 6 6 6 6 4 7 4 7 4 4 4 4 4 5 4 5 4 4 4 4 4 4 4 4	an	□-Y / □-N	□-Y / □-N
					12361.12		E	N				1.1.1	□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N
				ng "below well and this sector is an address of a constant of a			E	N					□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N
		-					E	N		10			□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y/□-N
							E	N			99 (i.e.,) and distribution and i.e. and i.e. and in the second second second second second second second		□-Y / □-N	□-Y / □-N
		1 E					E	N				2.14	□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N
						12	E	N					□-Y / □-N	□-Y / □-N
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	Date: Ser	31067 0+26/ 7°C 25	Field	Personnel: (1 ta	ht lain le	n Ta Lin ast 24-t	lavio			% VEG. 2 90% bare 2 25% bare 2 25% bare ittle/no bo	ground ground ground	≤ 15cr ≤ 15cr ≤ 25%	m tall > 30cm te	Class 1 Class 2 all Class 3	(Easy) (Moderate) (Difficult) (Very difficult
urbine No.	Time Placed	(specent Time Collected	ed / direction) Species	Marker Used	Condition		UTM Coord		Po	osition turbine	Subsi		Visibility Class*		Scavenge
7	750		Silver-hair	A Hand	thomas	Zone	and the second se	Northing		n) Directio	soll		2		□-Y / 🗹-N
1					TUC		E	N	21					□-Y / □-N	□-Y / □-N
_	N.	site het	I'W X	gravit	ii.		E	N				-rit Gill Sa	1	□-Y / □-N	□-Y / □-N
		Colin	FOLATS	10 concete	tie U		E	N						□-Y / □-N	0-Y/0-N
-		C)	60) concere	ap .		E	N						□-Y / □-N	D-Y / D-N
			D. /				E	N					-	□-Y / □-N	0-Y / 0-N
		4	Paul				E	N			-			□-Y / □-N	□-Y / □-N
			Road				E	N						□-Y / □-N	0-Y/0-N
7	815	6:45pm	Veely	thead	show	17	Eught	N 43LEM	10	N	Va		2	□-Y / 💁-N	D-Y / 2-N
	01-2	W. TOpen			Interest		E	N	10		7		1	□-Y / □-N	□-Y / □-N
				6h	s plow .		lat clu	N	lict					□-Y / □-N	□-Y / □-N
			6 0				E	N						□-Y / □-N	□-Y / □-N
	****		¥ —	Sm	oft p	24-	EDG ININ	NTONO						□-Y / □-N	□-Y / □-N
							E	N						□-Y / □-N	□-Y / □-N
7.2	835	6:20.	Horry But	thread	thawed	17	E438296	1476320	1 In	S	Vbg/S	Dil	2	□-Y / 🗹-N	□-Y / 🗹-N
LU	0.50	G. Sopr	the second s	the state of the second state of the	a second second second second	1.4		N		~	31	1		□-Y / □-N	□-Y / □-N
	X	5	Phross	0b	1		E	N					1	□-Y / □-N	□-Y / □-N
			a be	obson ween 2 ta pigu	onds.		E	N						□-Y / □-N	□-Y / □-N
			U	Figu			E	N		1,91,1 A.M. MAX 2010 A. C.			1	□-Y / □-N	0-Y/0-N

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Stantec		Searcher Efficiency Record Form							
Project No: 160 Date: Octobe TESTER: NST	161067 213/16	Project Name: Field Personnel: $\overline{1}$	Ale	laite					
Weather: LAP (°C)	WIND speed/direction		PPT	PPT (last 24-hrs					

% 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)

Turbir No.	Place	ed	Time Collected	Species I	Marker Used		UTM Coord	linates	Tur	on from b ine	Substrate	Visib. Class*	Detected?	Scavenged?
	HH:m	ากา	HH:mm	1		Zone	Easting	Northing	Dist. (m)	Direction				ļ
6	6.0	52	na	SCKI	thracl	171	E 451990	N 47625	18	SE	gravel	1	₩-Y/□-N	0-Y/02-N
200000 (0000000) (Marrie				~			E	N		-	3		0-Y/0-N	□-Y / □-N
1.1.1							E	N	ON	small wer	madded madded +grassy		□-Y / □-N	□-Y/□-N
							E	N	(X) (ar	mudour a tarassy		□-Y / □-N	□-Y / □-N
					T		E	N					□-Y / □-N	□-Y/□-N
			Ľ		,†	1	E	N	- 7		- Namoff grave	D	□-Y / □-N	0-Y/0-N
				TT		+	E	N	7	Γ,			□-Y / □-N	□-Y / □-N
2							E	N		1	ale r		□-Y / □-N	□-Y / □-N
_		-				1	E	N					□-Y/□-N	0-Y/0-N
12	811	65	3009	Amwo	thread	17	E 44 7851	N47633	18	W	Via	2	D-Y/DAN	0-Y/0-N
	<u> ~ .</u>				- The say	and the second se	E435970	N4765461	27	695	Say Charvert		0-Y/0-N	
20	54	5	445	Horry But	thrust	i	EL	NL	L	i	- T	L	□-Y / □-N	□-Y / □-N
2		-		rivery m	1.1. 5	1	Ε	N					□-Y / □-N	□-Y / □-N
						F	E A Ph	DG:455					□-Y / □-N	□-Y / □-N
				-	T.		E	N					□-Y / □-N	□-Y / □-N
		-				-	E	N					□-Y / □-N	□-Y / □-N
							Ε	N					□-Y / □-N	□-Y / □-N
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(field notes QA/QC personnel) FORM 019 / REV: 2016-09-12 Print Name & Initial: HMA

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-> between
turbane and
tubne and yellow pore

% 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)

ØT

T-14

: T-11 Ør

Turbine No.	Time	Time Collected	Species	Marker Used	Condition frozen/thawed		UTM Coord	dinates		ition urbine	Substrate	Visibility Class*	Detected?	Scavenged
	Placed	Collected			IIOzen/Indwed	Zone	Easting	Northing	Dist. (m)	Direction		Ciuss		
6	8:15am	17:00	Howy Bat	Thread	Thawed	17	E 0451976	N 4762569	46	S	Clover gettes	2	□-Y / ២-N	D-Y/04-N
							E	N			Ð	1): -	□-Y / □-N	□-Y / □-N
11	8:30 an	16:45	Shavp-shinned	Thread	Thaved	17	E 0449156	N4763595	24	SE	Soy	2	□-Y / □ -N	
			Hawk				E	Ν	and				□-Y / □-N	□-Y / □-N
14	8:40an	nia	Common	Thread	Thawred	17	E0447166	N 4764 852	2	W	gravel	1	0-Y/N	
			Redpull		210 21		E	N			0		□-Y / □-N	□-Y / □-N
			· • •				E	N					□-Y / □-N	□-Y / □-N
							E	N					□-Y / □-N	□-Y / □-N
	- Barah		it skinster			112.00	E	N	No:				□-Y / □-N	0-Y/0-N
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T-6

PAGE OF Print Name & Initial: HANA olligun (field notes author)

Searcher Efficiency

Record Form

' PPT

Dilane

hain

PPT (last 24-hrs)

Project Name: Adelaide Wind Farm

Field Personnel: Dan

100%

CLOUD

Stantec

Project No: 160961067

TESTER: Annu

Weather <u>17-19°C</u> Conditions: TEMP (°C)

Date: Oct 17, 2016

Conigina

Km/h

WIND

(speed / direction)

Quality Control: This form is Print Name & Initial: WELLSSA STRAUS

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(field notes QA/QC personnel)

FORM 019 / REV: 2016-06-01

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Stantec	Searcher Efficiency Record Form	T-22	T-19	T-12	
Project No: 160961067 Date: Oct 20, 2016	Field Personnel: Dan Dilaria		: / / % VEG. COVER	VEG. HEIGHT	
TESTER: Anna Corrigan		- 6	≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
- printike Contraction			≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
Wasther Ge Gkn/h/ 1	E 100% Rain Rain/For		≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Conditions: TEMP (°C) (speed / direct	CLOUD PPT PPT (last 24=h		Little/no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)

Turbine	Time	Time Collected	Species	Marker Used	Condition frozen/thawed		UTM Coord	Inates	from	ition urbine	Substrate	Visibility Class*	Detected?	Scavenged?
No.	Placed	Collected			liozen/indwed	Zone	Easting	Northing	Dist. (m)	Direction			1	1
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an a				Thread			E	Ν					□-Y / □-N	□-Y / □-N
	100						E	N					□-Y / □-N	□-Y / □-N
19	8:50am	n/a	Hoary Bal		Thawed	17	E 0442451	N4764968	0	N	Cement	1	□ - N	□-Y / 🕰 🕂
				Thread			E	N					□-Y / □-N	□-Y / □-N
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12	9:05 am	17:00	Chipping		Thawed	17	E 0447828	N47683360	48	W	gravel	ł		0-Y / 🗗 🕅
			Spurrow	Thread			E	N			0		🗆-Y / 🗆-N	□-Y / □-N
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Pro	lact No:	16096106	7	Dr	oiect	Name: Aa	lelaide Wind	d Earm				% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
110	YEAR:			Sale Plant in			ash Colvi		and the second			≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
DED N	SEASON:		4th 2016	tiles	r en	sonnei. 1	ash colu	The .				≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
	Veather:			155	C.L.	ear	0	21				≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
		TEMP (°C)	ZZKAL	ND		OUD	 PPT	PPT (last	24 brel			Little/no bare ground		Class 4 (Very difficult)
				direction	CL	000		i i i (idai	24113)			Lime/no bare ground		
Date Placed	No	Carcass No.	Species	Condition fresh/frozer		UTM Coor	- Andrew - Contractor	from	sition turbine	Visib. Class		VISIT 2 ^{1,2}	VISIT 3 ^{1,2}	VISIT 4 1.2
dd/mm					Zone			Dist. (m)	Direction		Date: May 5th	Date: May 9th	Date: May 12th	Date: May 6th
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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, entralls) would not likely be further scavenged

> PAGE OF 4 Print Name & Initial: Nash Coluille (field notes author)

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(field notes QA/QC personnel) FORM / REV: 2016-04-20

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Pro	ect No:	16096106	7	Pr	oiect	Name: Aa	lelaide Wind	d Farm				% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
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	SEASON:	May 1	8th 1 APRil	6			idiari con	VIIIC				≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
W	Veather:	1Dort	1 Km/h	11	Fair	(15%)	6		, .			≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
		TEMP (°C		ND		OUD	 PPT	PPT (last	24 brsl			Little/no bare ground	the second se	Class 4 (Very difficult)
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Date Placed	No	Carcass No.	Species	Condition fresh/frozen		UTM Coor	dinates	from	sition turbine	Visib. Class		VISIT 2 ^{1,2}	VISIT 3 1,2	VISIT 4 1.2
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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

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(field notes QA/QC personnel) FORM / REV: 2016-04-20

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Proi	ect No:	16096106	57	Pro	oject	Name: Ad	elaide Wind	d Farm	1000 118 1103a			% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
and a	YEAR:		alo na si a kan	00,00,50,50,50			ash Col		174574C B1			≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
\$	FASON	June	5th			1	usi cu	INTIC		5 U		≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
w	eather:	15°C	IQKAN	11 +	hund	ssional	13-5mm	1-4	-			≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
	-	TEMP (°C		ND		OUD	PPT	PPT (last	24 hrs)			Little/no bare ground		Class 4 (Very difficult)
			speed/c	direction										
Date	Turbine	Carcass	Encolar	Condition		UTM Coord	linates		sition turbine	Visib.	VISIT 1 ^{1,2}	VISIT 2 ^{1,2}	VISIT 3 1,2	VISIT 4 1,2
Placed dd/mm	No.	No.	Species	fresh/frozen	Zone	Easting	Northing		Direction	Class	VISIT 1 14	VI3II Z '-	VI3II 3 ··-	V1311 4 ··-
				~		E 044	N476	Carl I	1		Date: June 6th	Date: 1100 Oth	Date: June 13th	Date: Jupe 20th
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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

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Quality Control: Print Name & Initial: Anna Contran

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(field notes QA/QC personnel) FORM / REV: 2016-04-20

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	Stan	tec					er Trial C aily Che		n					
s	YEAR: SEASON: Veather:	1609610 2016 Sprin 2 2 %	c) W		Pers Outu		lelaide Wind Vash Col 5mm PPT					% VEG. COVER ≥ 90% bare ground ≥ 25% bare ground ≤ 25% bare ground Little/no bare ground	VEG. HEIGHT ≤ 15cm tall ≤ 15cm tall ≤ 25% > 30cm tall ≥ 25% > 30cm tall	VISIBILITY CLASS* Class 1 (Easy) Class 2 (Moderate) Class 3 (Difficult) Class 4 (Very difficult)
Date Placed dd/mm	No	Carcas No.	s Species	Condition fresh/frozer	n Zone	UTM Coord	dinates Northing	from	sition turbine) Direction	Visib Class		VISIT 2 ^{1,2}	VISIT 3 1,2	VISIT 4 1.2
15/0	102	16	Bat	Thured	17	1679	×476 2182	41	NE	1	Date: ULDE 16th Weather: Thurserston Scaviged? D-Y/ B-N	Date: June 20th Weather: () vocast Scav'ged? - Y / B-N	Date: June 23rd Weather: Clear I Scav'ged? D-Y / 1-1	Date: June 27th Weather: Clear N Scav'ged?□-Y/∰-N
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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, entralis) would not likely be further scavenged

PAGE ____ OF ____

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(field notes author)

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Date Placed dd/mm	bla	Carcass No.	Species	Condition fresh/frozen	n Zone	UTM Coord	dinates Northing		ition Iurbine Directior	Visib. Class		VISIT 2 ^{1,2}	VISIT 3 ^{1,2}	VISIT 4 1.2
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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

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(field notes author)

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Scavenger Trial Carcass Set-up & Daily Check Form

Project No: 160961067		Project Name:		
YEAR: 2016		Personnel:	Nash C	duille
SEASON: July 1	Hh an a shill a sin	0		
Weather: 26°C	18km/h/SW	20%	Ø	Ø
on placement date TEMP (°C)	WIND	CLOUD	PPT	PPT (last 24 hrs)
	speed/direction	1.000 200 100 - 10		

% 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		Carcass	Species	Condition		UTM Coord	dinates		ition turbine	Visib.	VISIT 1 1,2	VISIT 2 ^{1,2}	VISIT 3 1.2	VISIT 4 1,2
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* 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

(field notes author)

PAGE OF 4

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(field notes author)

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and the second	-		speed/o	direction				i i i jusi	24 mrs)			Little/no bare ground	≥25% > 30cm tall	cm tall Class 4 (Very difficult	
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(field notes QA/QC personnel) FORM / PEV: UT1604 1ster.

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Stantec		Scavenger Trial Carcass Set-up & Daily Check Form							
Project No: 160961067		Project Name:	Adelaide W	ind Farm					
YEAR: 2016		Personnel:	Lom 2	levi					
SEASON: Jell Weather: 27	8Km/S	0 -	0	0					
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)

riacea	Turbine No.	Carcass No.	Species	Condition fresh/frozen		UTM Coord		from t	ition urbine	Visib. Class	VISIT 1 1,2	VISIT 2 ^{1,2}	VISIT 3 ^{1,2}	VISIT 4 1,2
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(field notes author)

² Y-Scavenged indicates that the carcass is entirely missing or parts remaining (e.g. feathers, wings, entrails) would not likely be further scavenged

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		TEMP (°C) WI	ND	CLO	OUD	PPT	PPT (last	24 hrs)			Little/no bare ground		Class 4 (Very difficult)
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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

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dd/mm	I NO	No.	species	fresh/frozer	Zone	Easting	Northing			Class*			VIOIT O	1.
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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 expressing or parts remaining (e.g. feathers, wings, entrails) would not likely be further scavenged

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Pro	ect No:	16096106	7	Pr	oject	Name: Ad	elaide Wjno	Farm				% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS*
	YEAR:					sonnel:	Dan De	2				≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
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		TEMP (°C)		IND	CL	OUD	PPT	PPT (last	24 hrsl			Little/no bare ground		Class 4 (Very difficult)
				direction						Con	structure at T			,,
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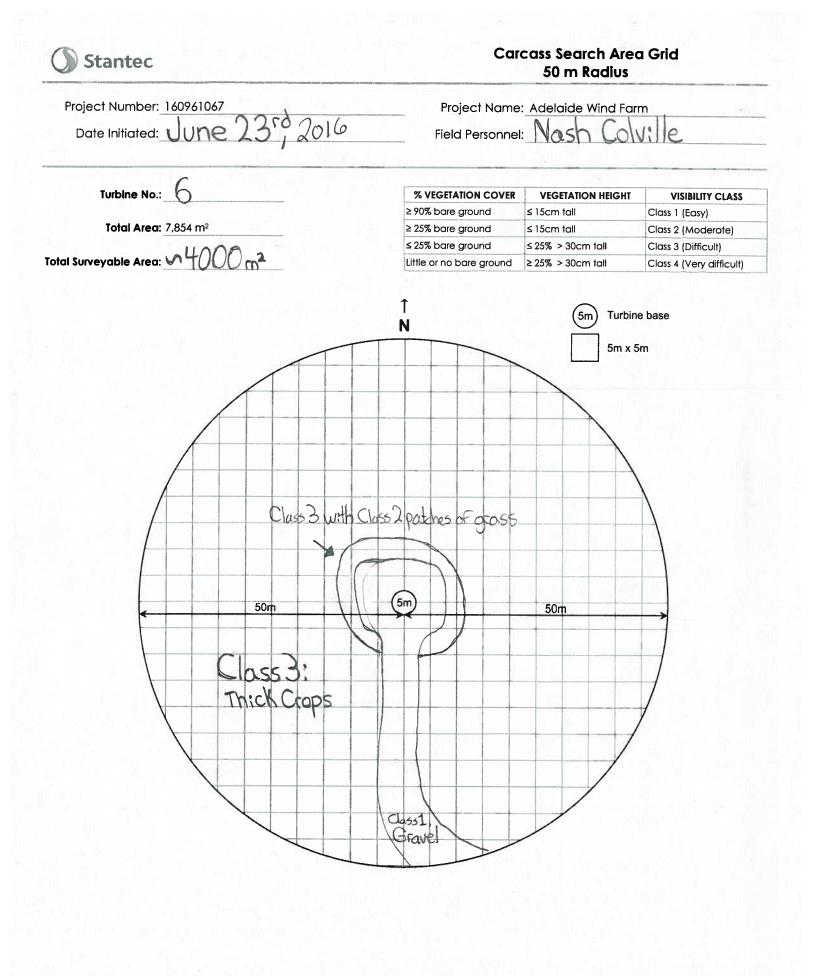
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Project Number: 160961067	Project Name	: Adelaide Wind Far	m
Date Initiated: May 12th, 2016		Nash Co	
Turbine No.: 6	% VEGETATION COVER		
	≥ 90% bare ground	✓ VEGETATION HEIGHT	VISIBILITY CLASS Class 1 (Easy)
Total Area: 7,854 m ²	≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
7051102	≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
tal Surveyable Area: 7854 m²	Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)
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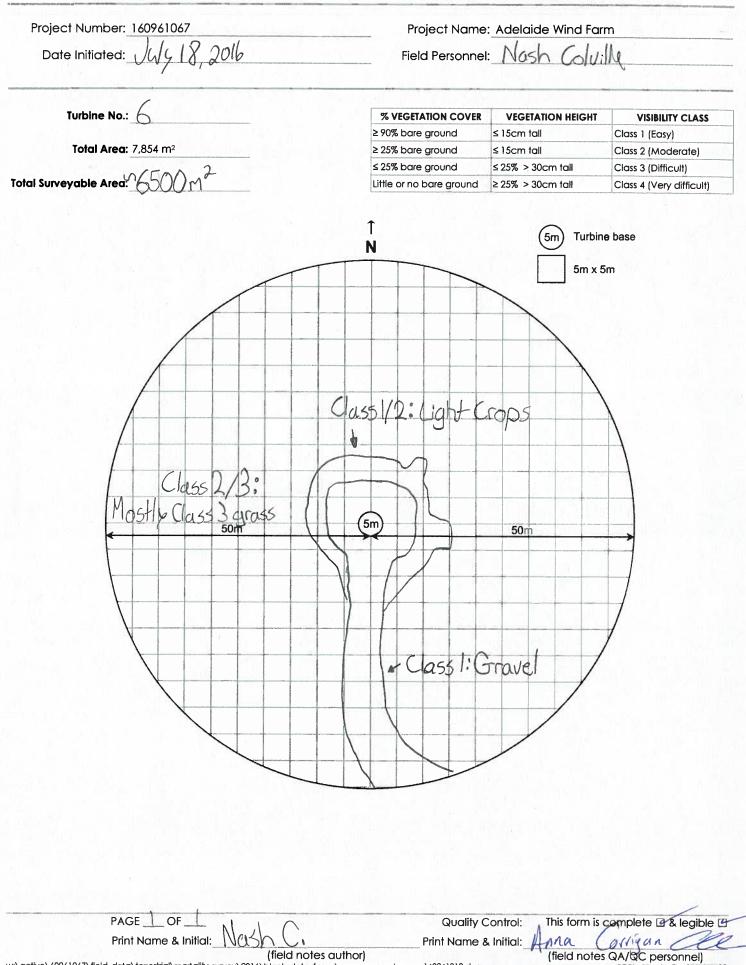
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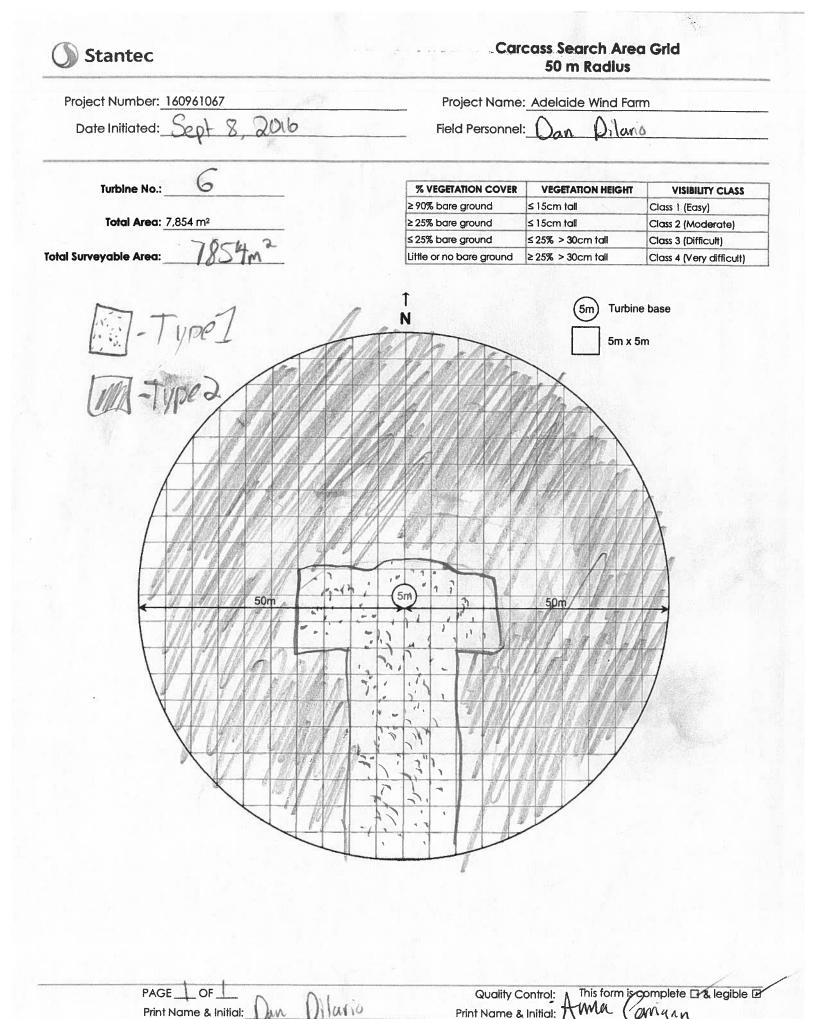
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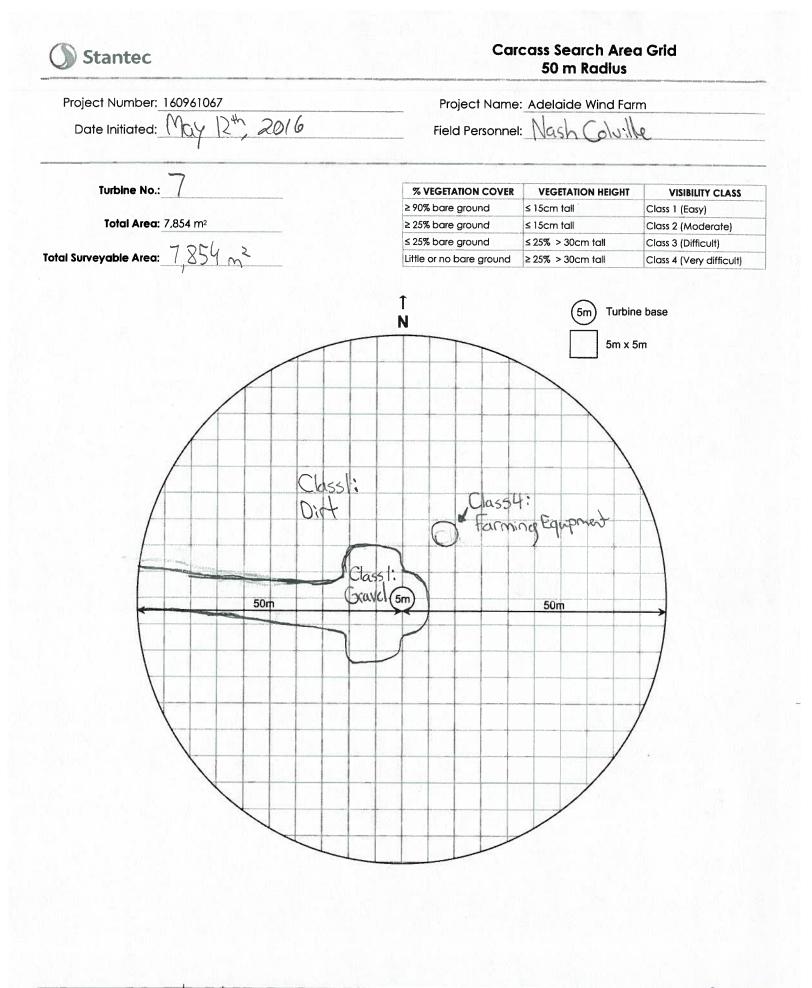


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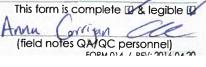




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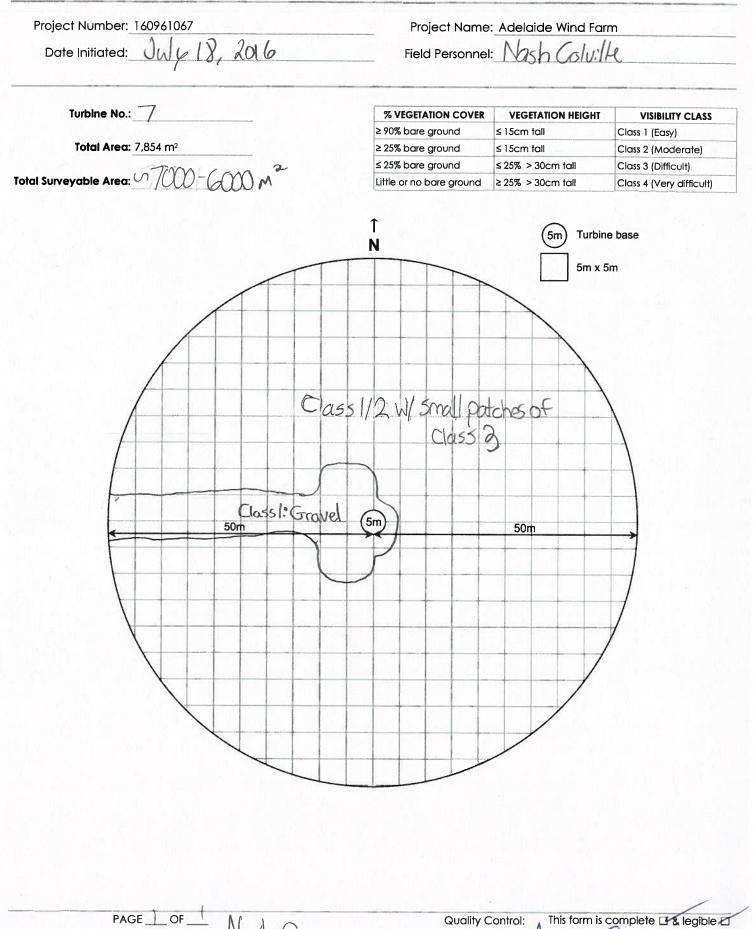


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Project Number: 160961067 Date Initiated: JUNE 230, 2016		: Adelaide Wind Far		
Date Initiated: JUNE 23, 2016		Field Personne	: Nash Co	Ville
Turbine No.: 7		% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
Total Area: 7 ,854 m ²		≥ 90% bare ground ≥ 25% bare ground	≤ 15cm tall ≤ 15cm tall	Class 1 (Easy)
		≤ 25% bare ground	≤ 25% > 30cm tall	Class 2 (Moderate) Class 3 (Difficult)
al Surveyable Area: $7,854 \text{ m}^2$		Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)
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Carcass Search Area Grid 50 m Radius



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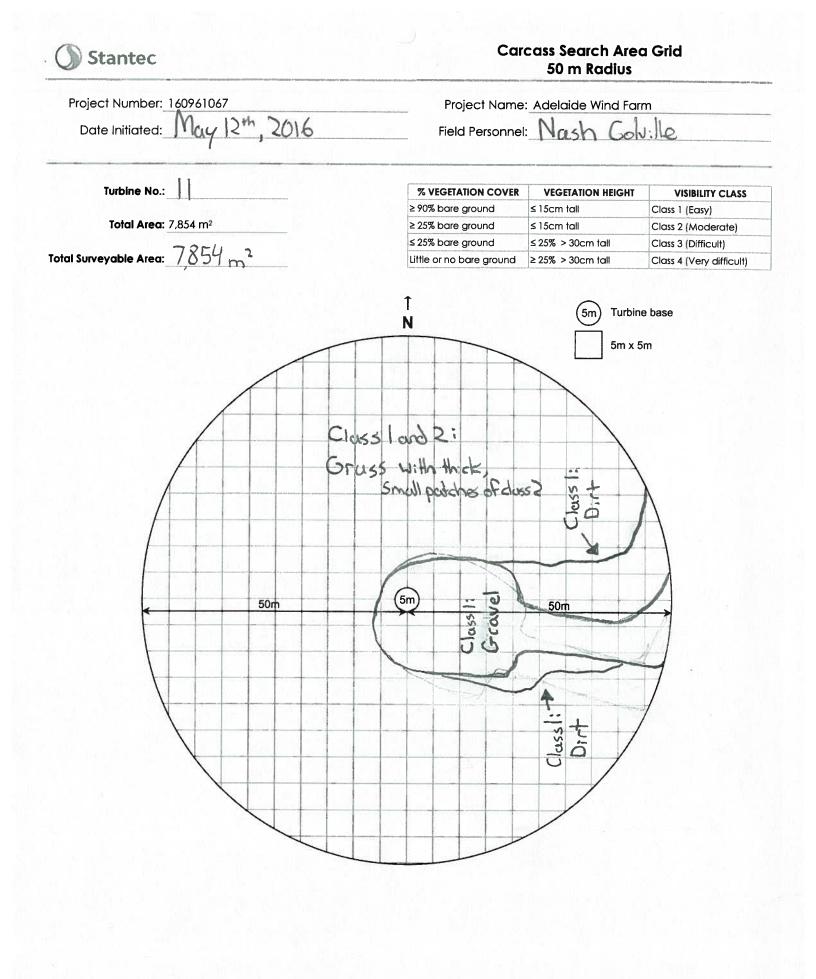
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Project Number: 160961067	Project Name: Adelaide Wind Farm		m
S. E. Doll		DOD	
Date Initiated: Gar Sth, OOL 6	Field Personnel: <u>Em Stay</u>		
Turbine No.:	% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
A CONTRACT OF	≥90% bare ground	≤ 15cm tall	Class I (Easy)
Total Area: 7,854 m²	≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
Surveyable Area: 1125m2	≤ 25% bare ground ,	≤ 25% > 30cm tall	Class 3 (Difficult)
Surveyable Area: 100m	Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult
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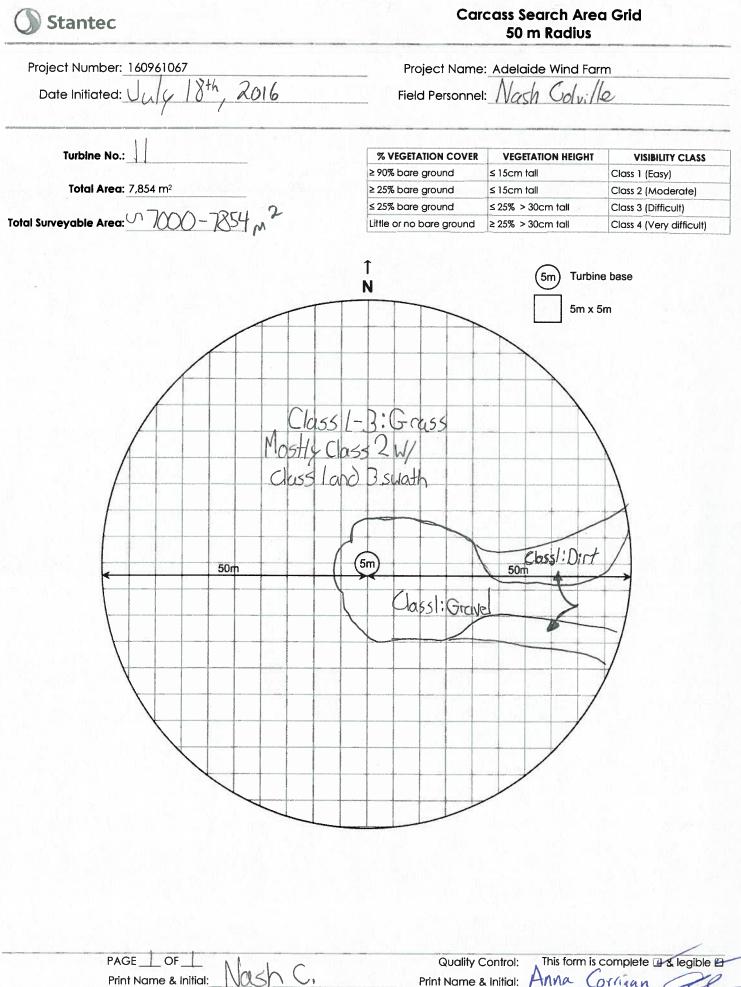
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Date Initiated: June 23, 201	6 Field Personne	" Nash Co	wille
	% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
	≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
Total Area: 7,854 m ²	≥ 25% bare ground ≤ 25% bare ground	≤ 15cm tall ≤ 25% > 30cm tall	Class 2 (Moderate) Class 3 (Difficult)
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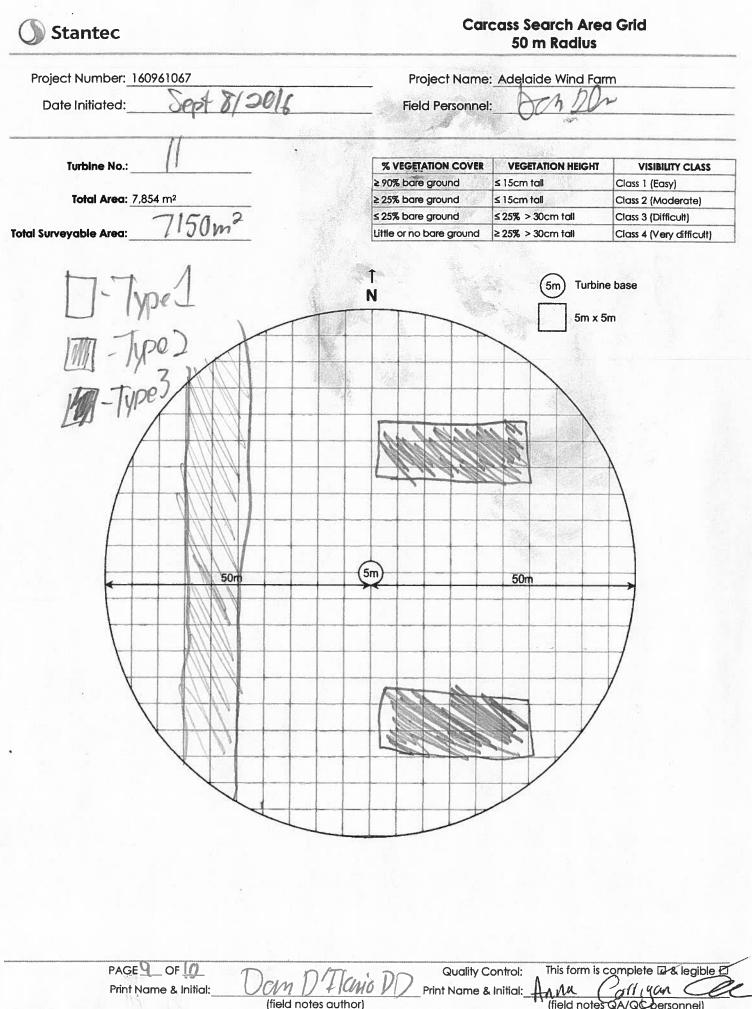


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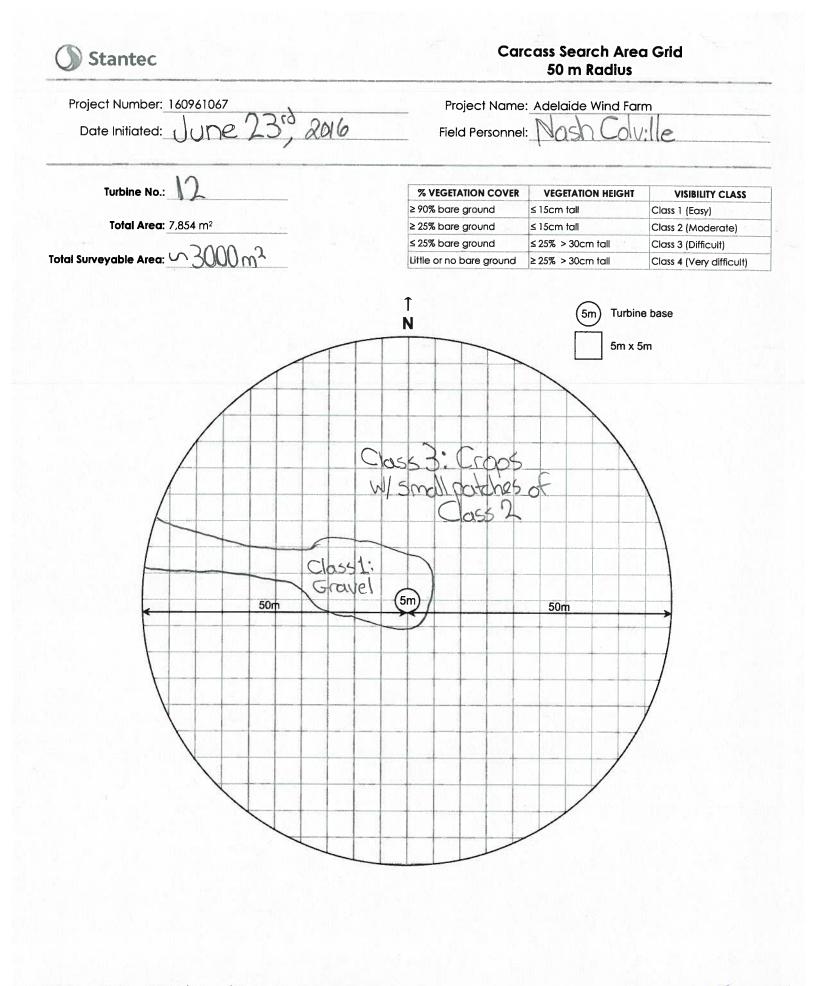
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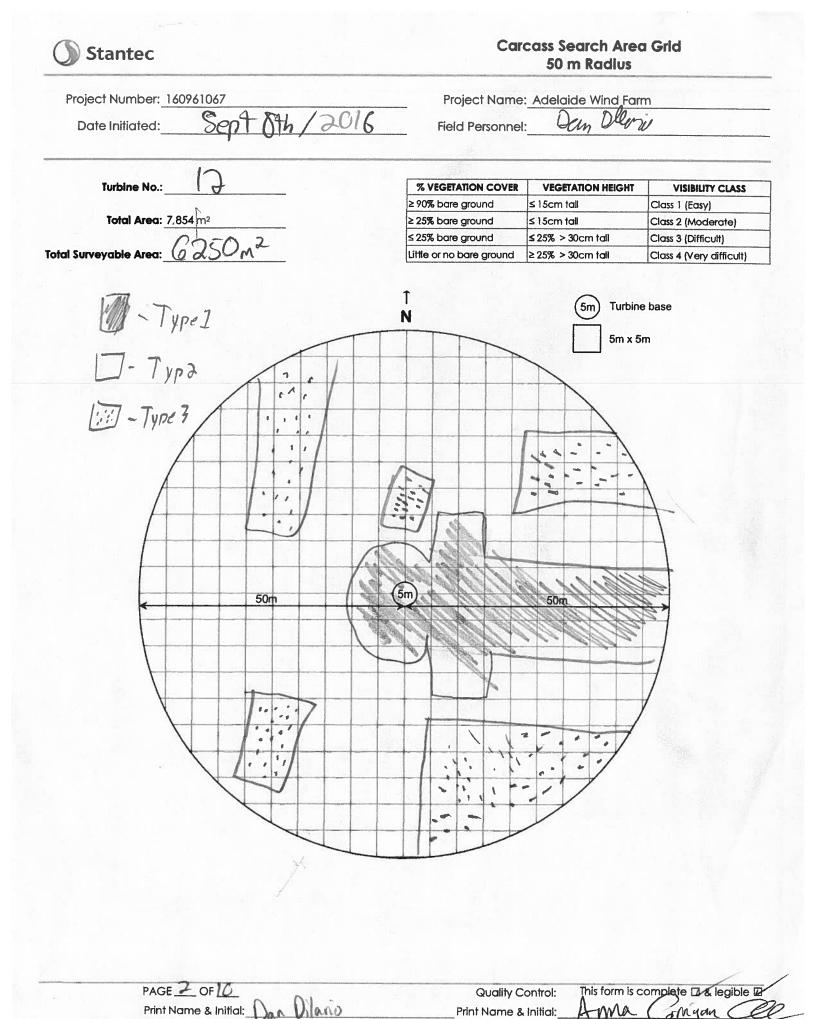
Project Number: 160961067	Project Nan	ne: Adelaide Wind Far	m
Date Initiated: May 12th, 2016	120	nel: Dan Dilari	
Turbine No.: 12	% VEGETATION COV	*	VISIBILITY CLASS
Total Area: 7,854 m²	≥ 90% bare ground ≥ 25% bare ground	≤ 15cm tall ≤ 15cm tall	Class 1 (Easy) Class 2 (Moderate)
	≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
otal Surveyable Area: 7,854 m²	Little or no bare ground	d ≥25% > 30cm tall	Class 4 (Very difficult)
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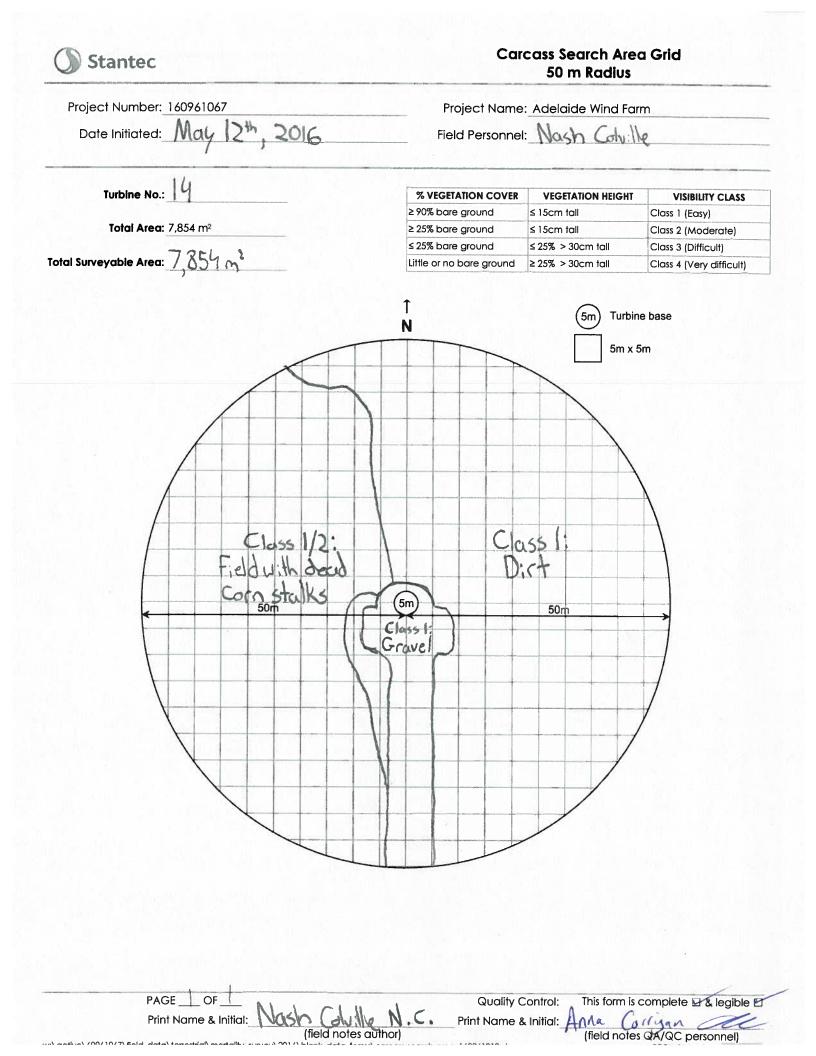
Stantec		Carcass Search Area Grid 50 m Radius		
Project Number: 160961067		Project Name	: Adelaide Wind Far	m
Date Initiated: JUJ 4 18, 2016	****	Field Personnel	: Nash Colvil	4
	2 ORDER TO AND A DESIGN AND ADDRESS OF ADDRESS ADDRESS ADDRESS ADDRESS	VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
Total Area: 7,854 m²		% bare ground	≤ 15cm tall	Class 1 (Easy)
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otal Surveyable Area: 57000 m²	\$ **	or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)
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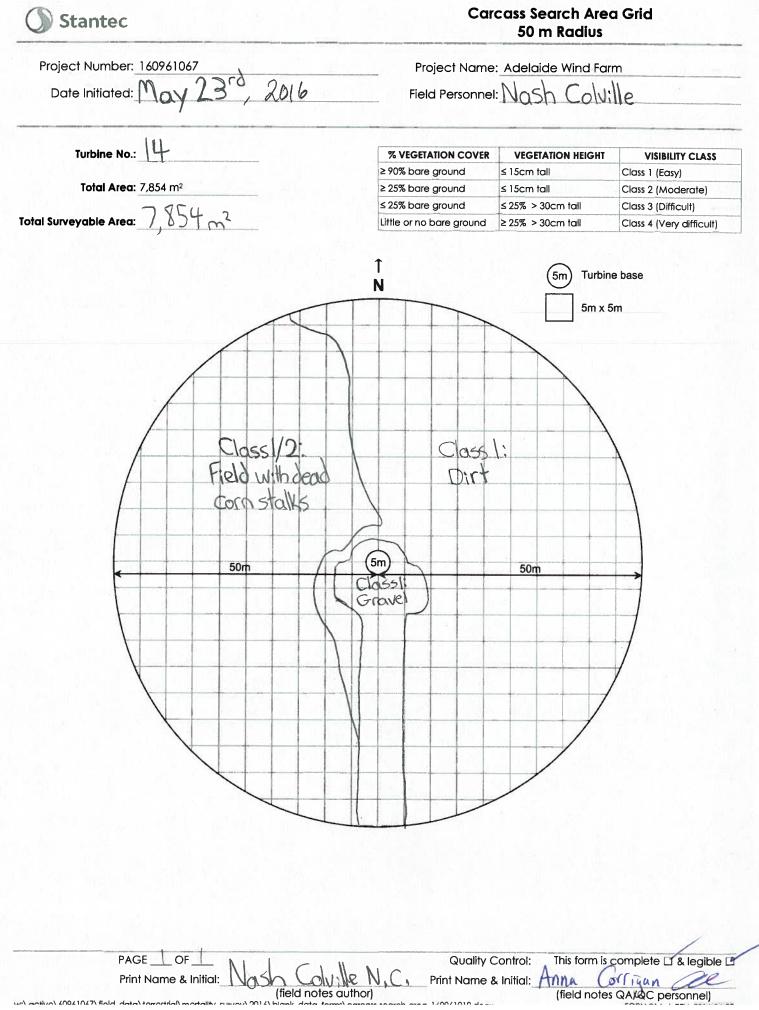
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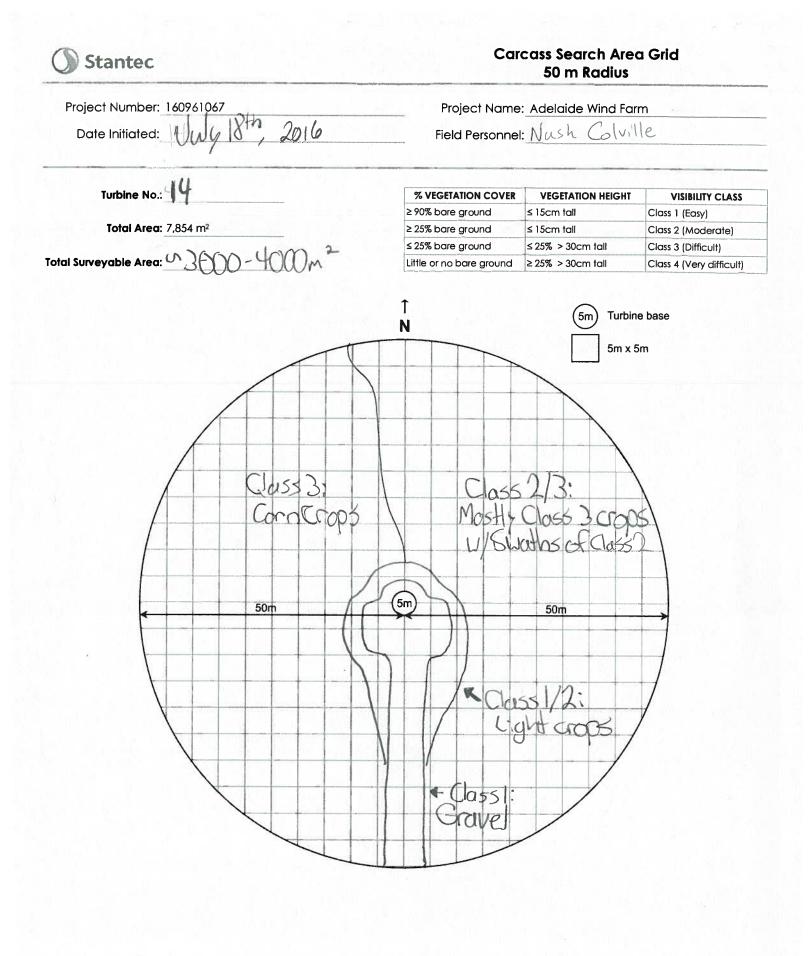


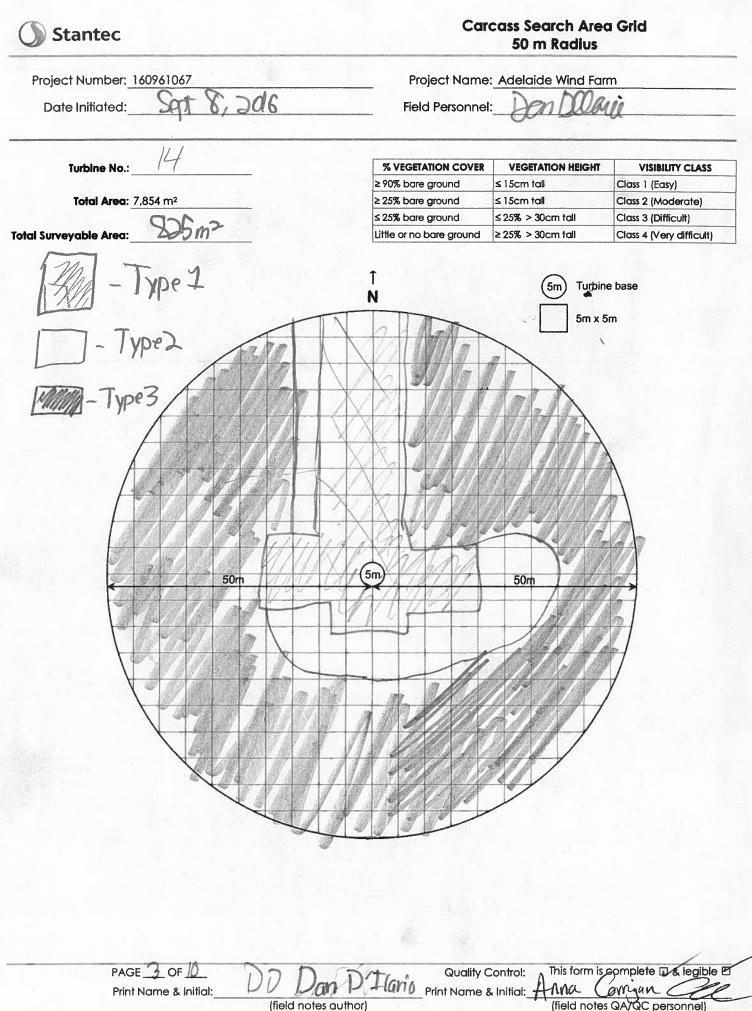
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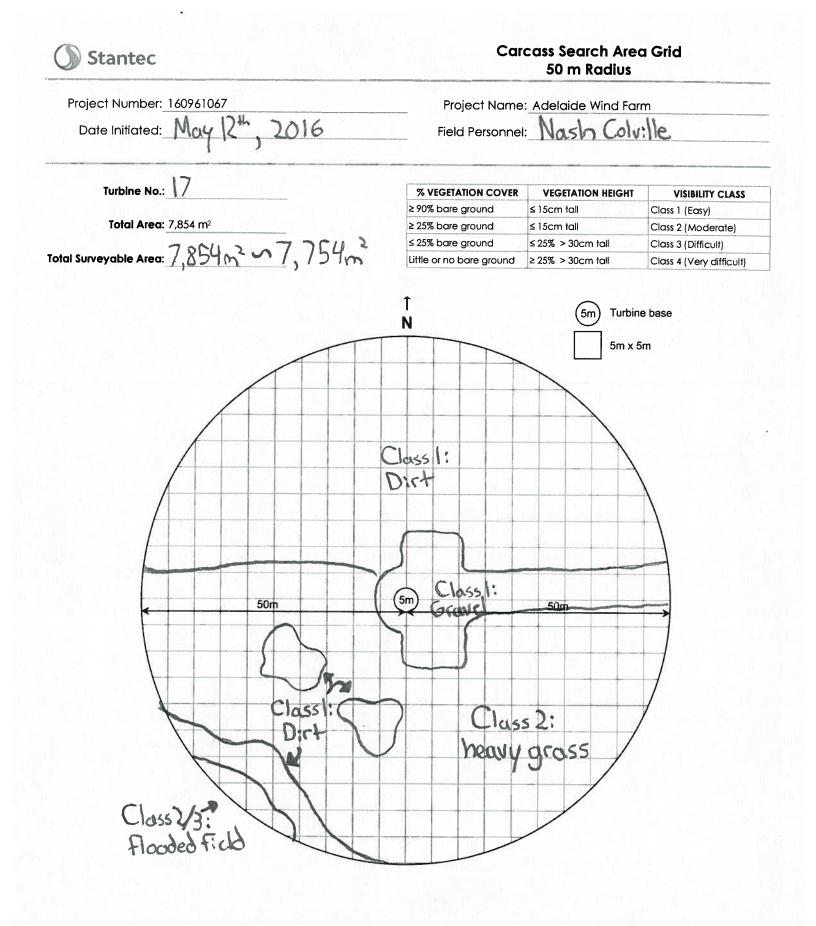






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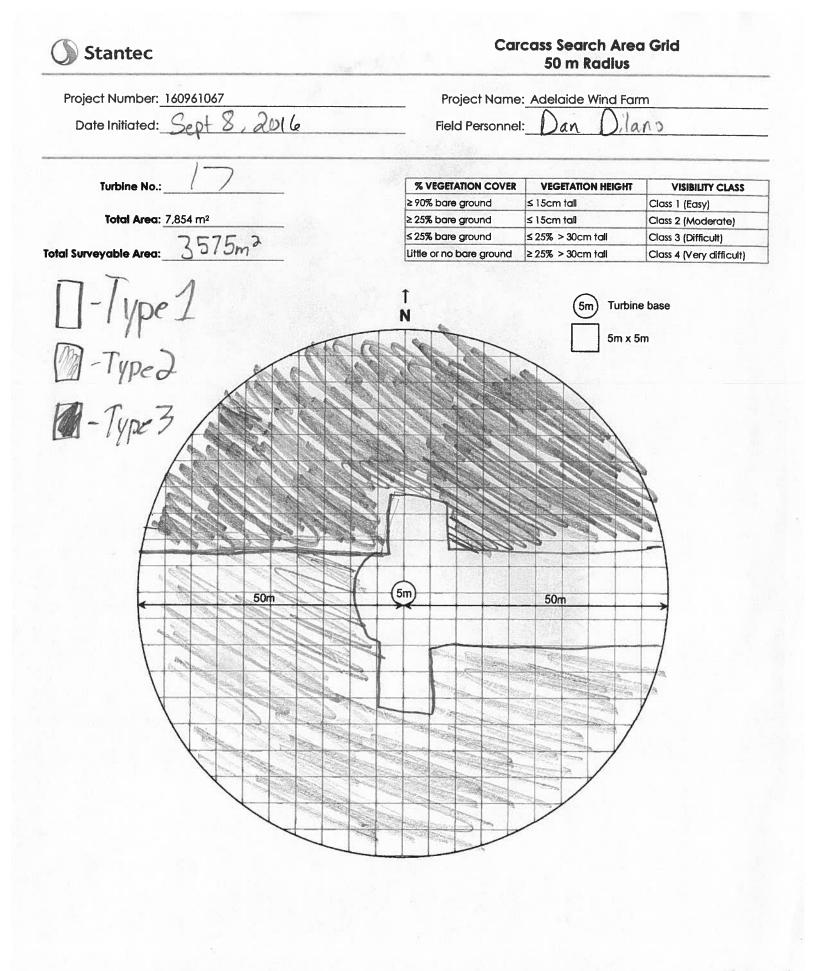
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Project Number: 160961067 Date Initiated: JUNE 237 2016 Turbine No: 177 Total Area: 7,854 m ² Total Area: 7,854 m ² Total Surveyable Area: 5500 pm ⁴ Total Surveyable Area: 5500 pm ⁴	Stantec	Carcass Search Area Grid 50 m Radius						
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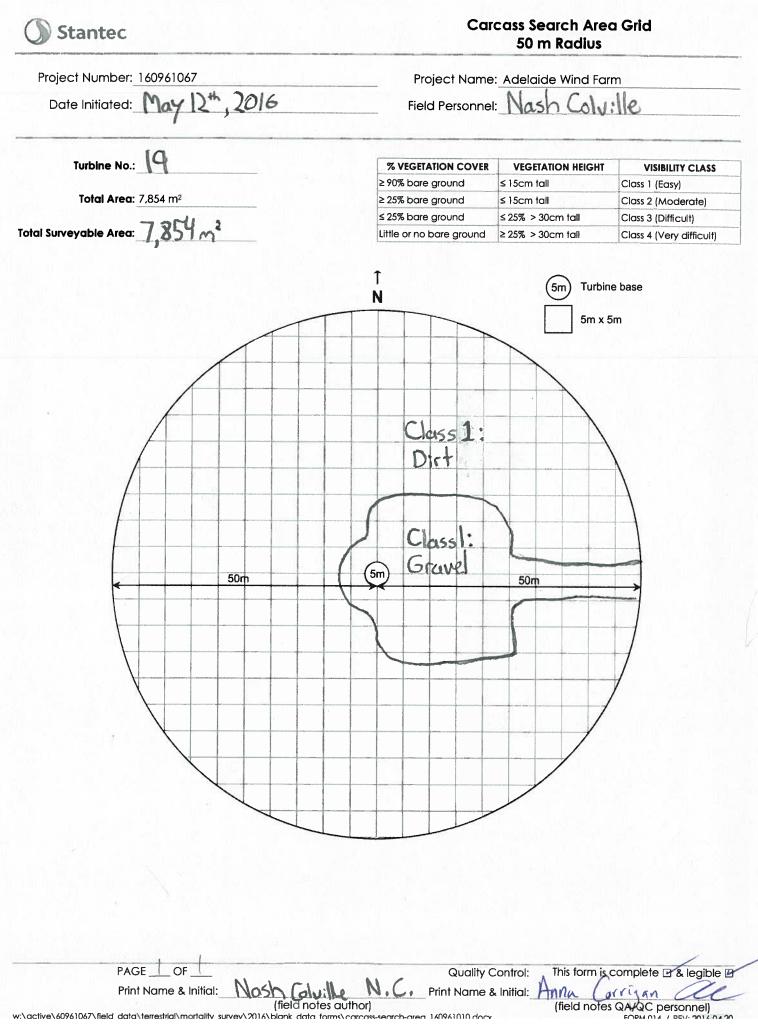
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Project Number: 160961067 Date Initiated: June 23rd, 2016	Field Perso	onnel: Nash Colj	ille
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	≥ 90% bare ground		VISIBILITY CLASS Class 1 (Easy)
Total Area: 7,854 m²	≥ 25% bare ground		Class 2 (Moderate)
79511	≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
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	Project Number: 160961067	Project Name	: Adelaide Wind Fari	m
Total Area: 7,854 m ² Tal Surveyable Area: MSTON-5000 m ²	Date Initiated: UW4 18th 2016	Field Personnel	Nash Colud	K
Total Area: 7.854 m ² Pal Surveyable Area: MS500-5000 m ² 25% bare ground ≤ 15cm tall Class 2 (Moderate) 525% > 30cm tall Class 3 (Difficult) Uttle or no bare ground ≥ 25% > 30cm tall Class 4 (Very difficult)		% VEGETATION COVER	VEGETATION HEIGHT	VISIBILITY CLASS
ral Surveyable Area:		≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
The surveyable Area: MS 500 - 5000 m Little or no bare ground ≥ 25% > 30cm tail Class 4 (Very difficult N Gm Turbine base 5m x 5m Gm Class 5 i 50m	Total Area: 7,854 m ²	≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
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Project Number: 160961067	Projec	t Name: Adelaide	Wind Farm	in the second
Date Initiated:	Field Pe	ersonnel:	1 Ilmi	<u> </u>
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Turbine No.: 19	% VEGETATION	COVER VEGETATIO	ON HEIGHT VISIBI	ILITY CLASS
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Carcass Search Area Grid 🔊 Stantec 50 m Radius Project Number: 160961067 Project Name: Adelaide Wind Farm Date Initiated: May 12th, 2016 Field Personnel: Nash Colville Turbine No.: 20 % VEGETATION COVER **VEGETATION HEIGHT VISIBILITY CLASS** ≥90% bare ground ≤ 15cm tall Class 1 (Easy) Total Area: 7,854 m² ≥ 25% bare ground ≤ 15cm tall Class 2 (Moderate) ≤ 25% bare ground ≤ 25% > 30cm tall Class 3 (Difficult) Total Surveyable Area: 7,854 m² Little or no bare ground ≥ 25% > 30cm tall Class 4 (Very difficult) Î **Turbine base** 5m Ν 5m x 5m Class land 2: and grass Class : Class 1: Dirt Gravel 5m 50n 50m

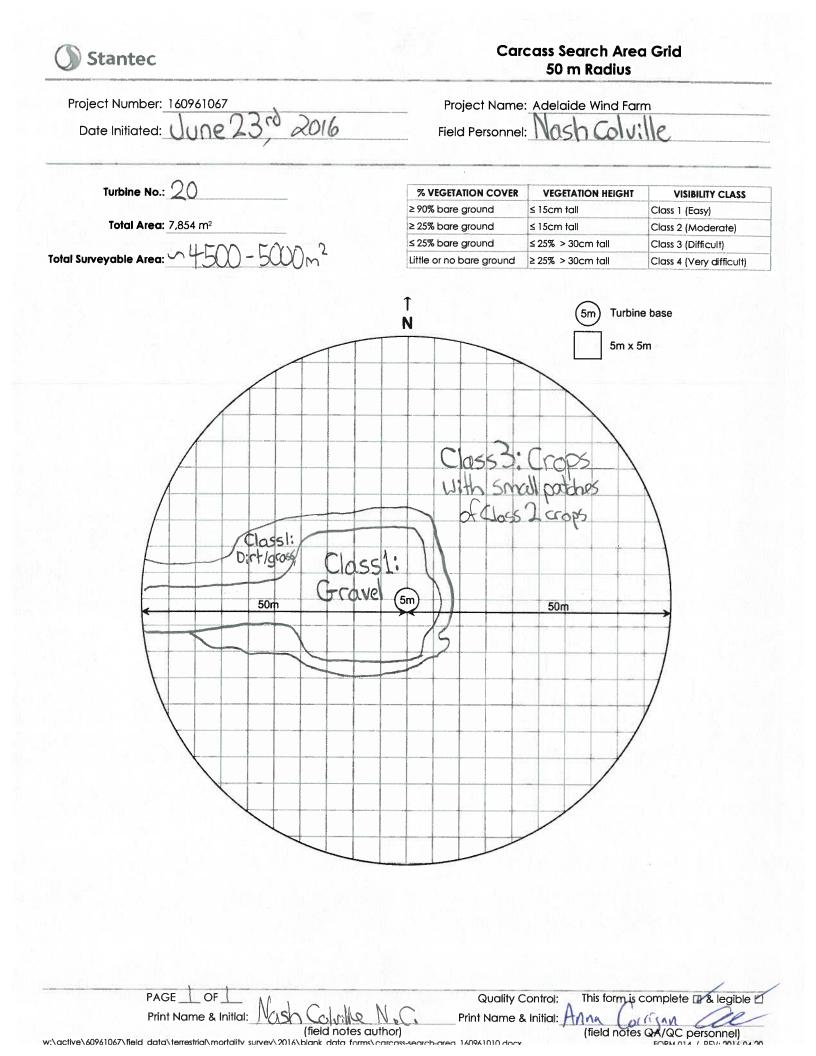
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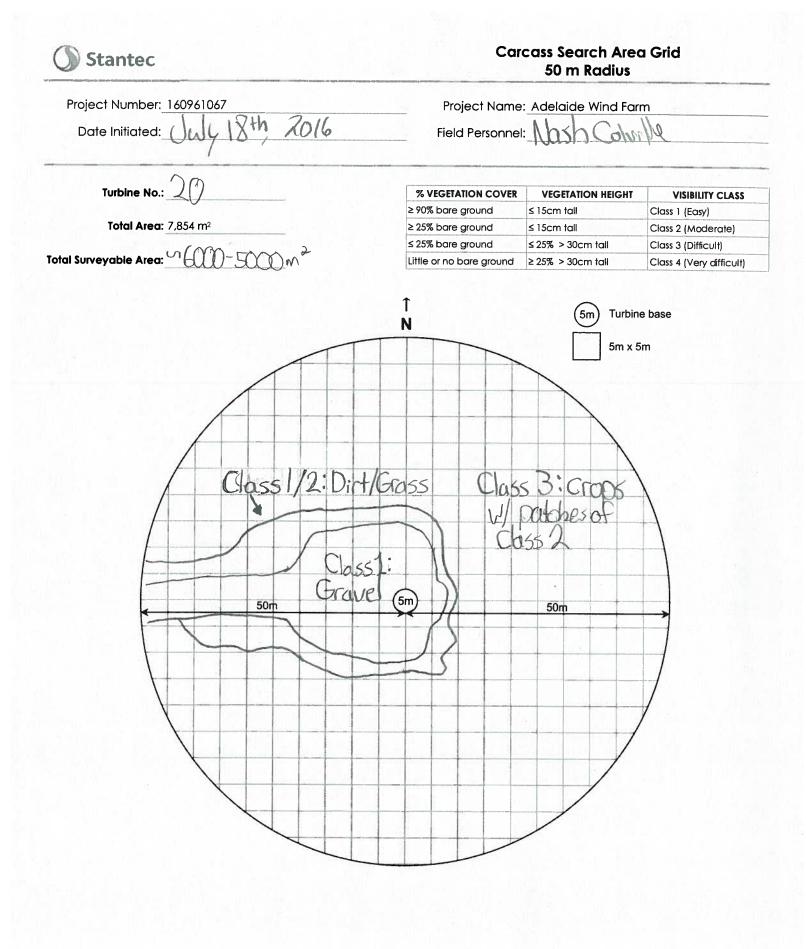
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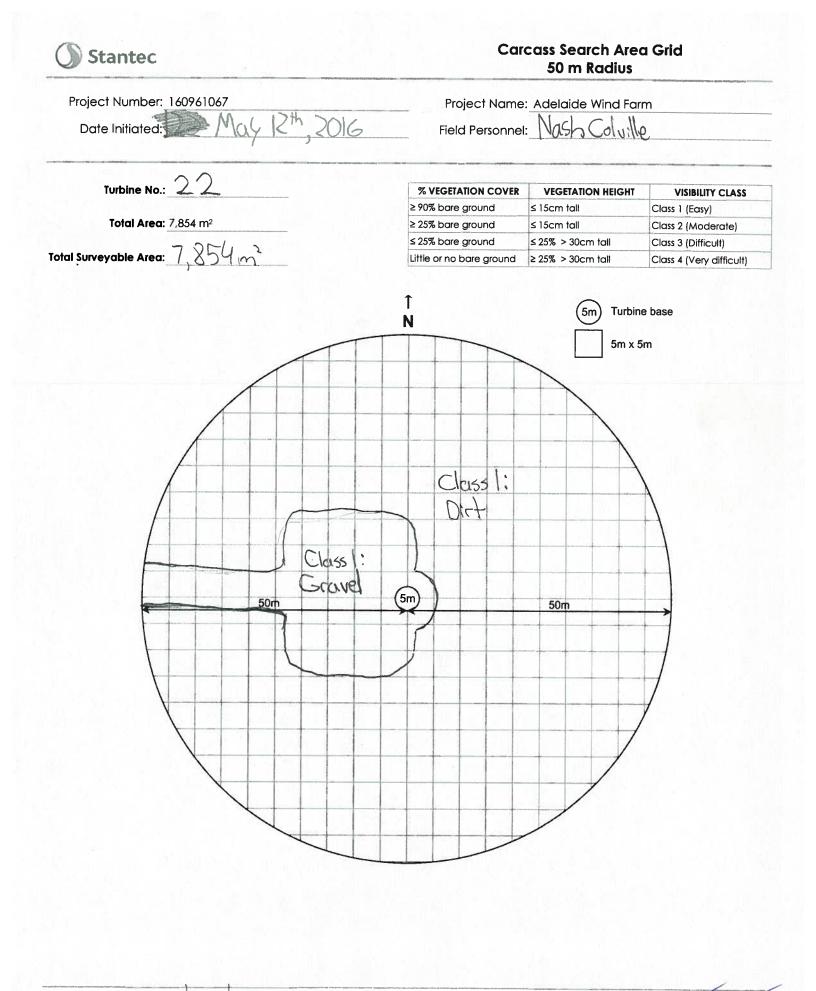
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Carcass Search Area Grid Stantec 50 m Radius Project Number: 160961067 Project Name: Adelaide Wind Farm 0410 8/2016 Uni Date Initiated: Field Personnel: Turbine No.: **VEGETATION HEIGHT** % VEGETATION COVER **VISIBILITY CLASS** ≥90% bare ground ≤ 15cm tall Class 1 (Easy) Total Area: 7,854 m² ≥ 25% bare ground ≤ 15cm tail Class 2 (Moderate) ≤ 25% bare ground ≤ 25% > 30cm tall Class 3 (Difficult) Total Surveyable Area: 7650m Little or no bare ground ≥ 25% > 30cm tall Class 4 (Very difficult) Jype I type 7 Ť **Turbine base** 5m N 5m x 5m 5m 50m 50m 6 This form is complete 🗹 & legible 🗗 PAGE 4 OF () **Quality Control:** ON NO Print Name & Initial: Print Name & Initial: TTMA

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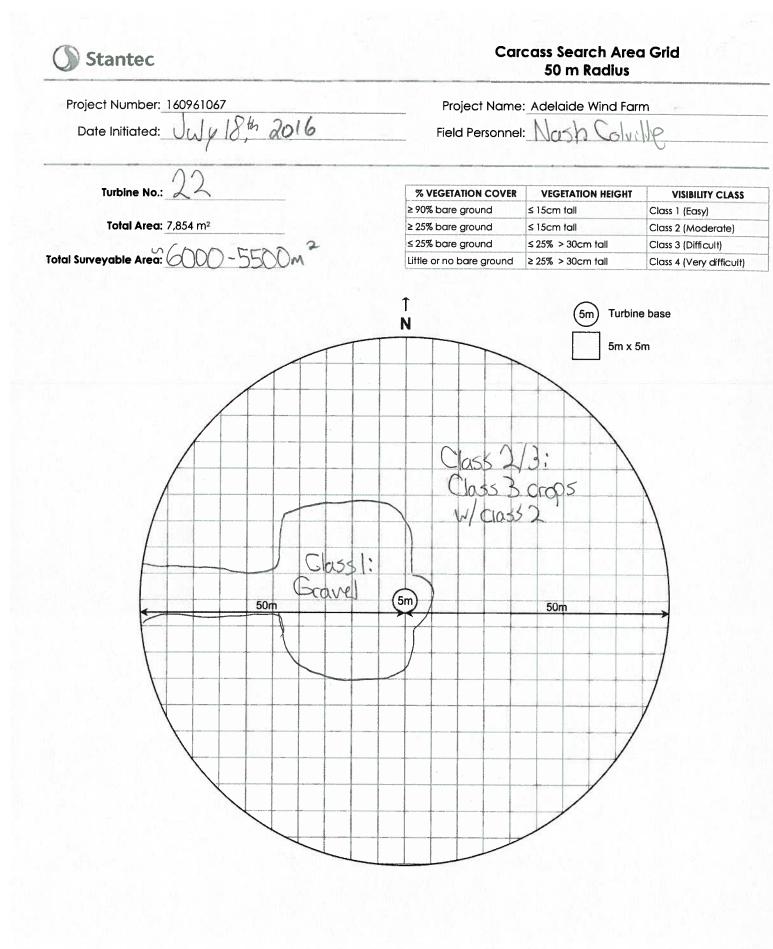
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Stantec	Carcass Search Area Grid 50 m Radius	
Project Number: 160961067 Date Initiated: JUNE23, 2016	Project Name: Adelaide Wind Farm Field Personnel: Nash Colville	
Turbine No.: 22 Total Area: 7,854 m ² tal Surveyable Area: 7,854 m ²	≥ 90% bare ground ≤ 15cm tall Class 1 (f ≥ 25% bare ground ≤ 15cm tall Class 2 (r ≤ 25% bare ground ≤ 25% > 30cm tall Class 3 (f	Moderate)
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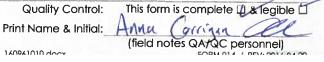


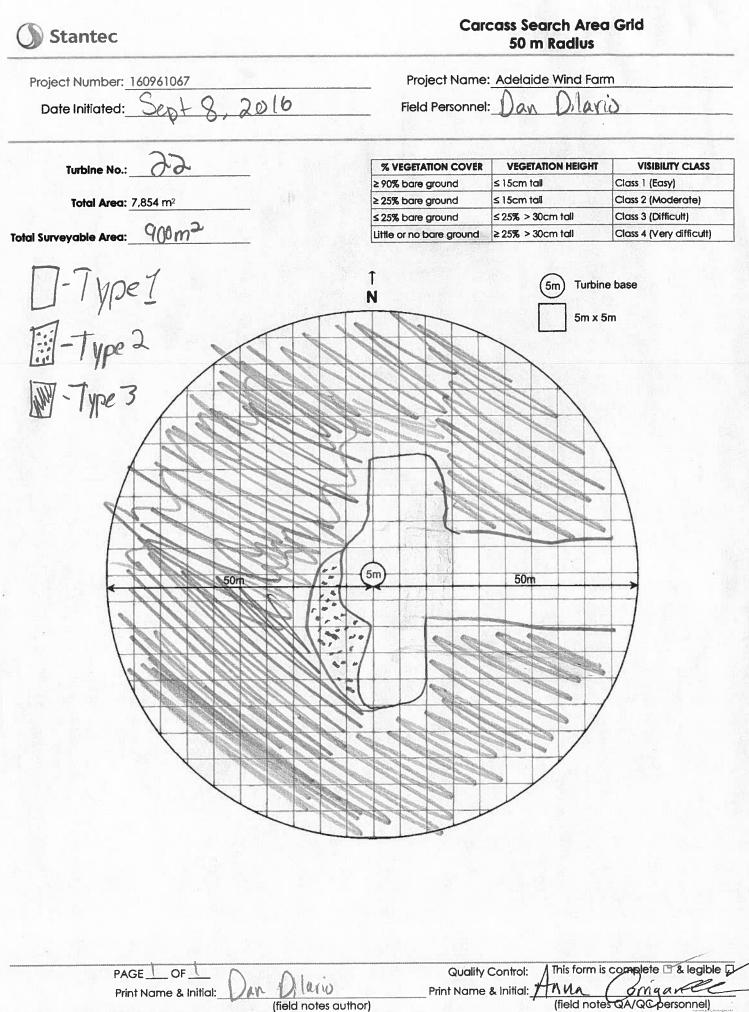
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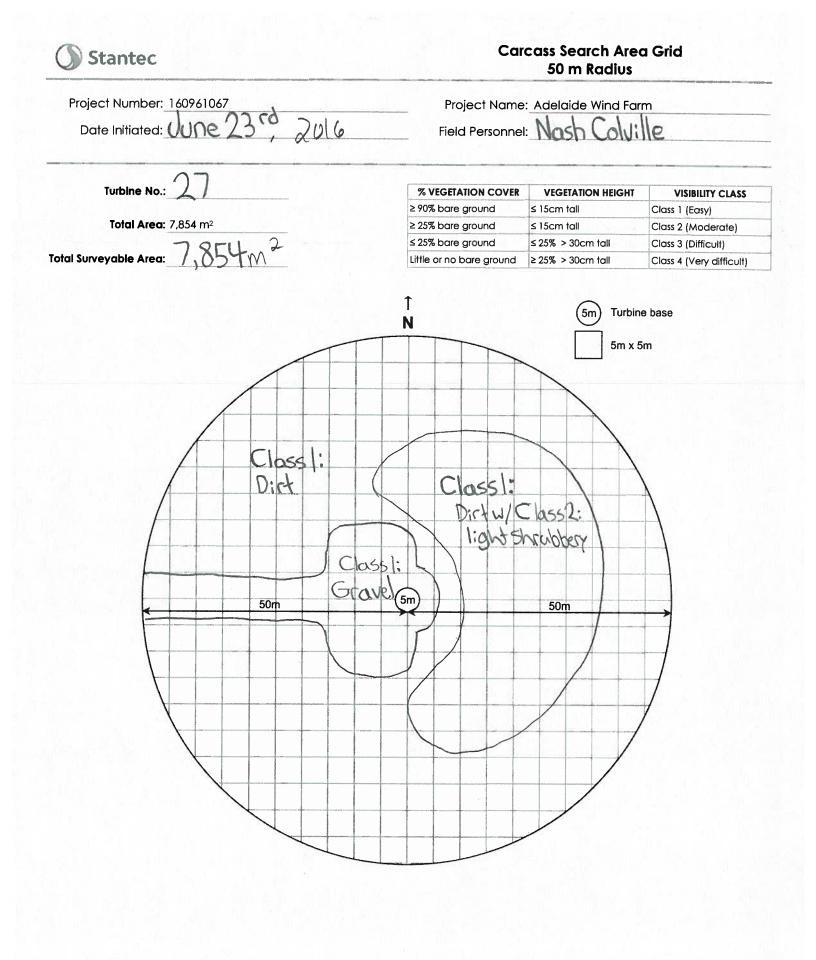
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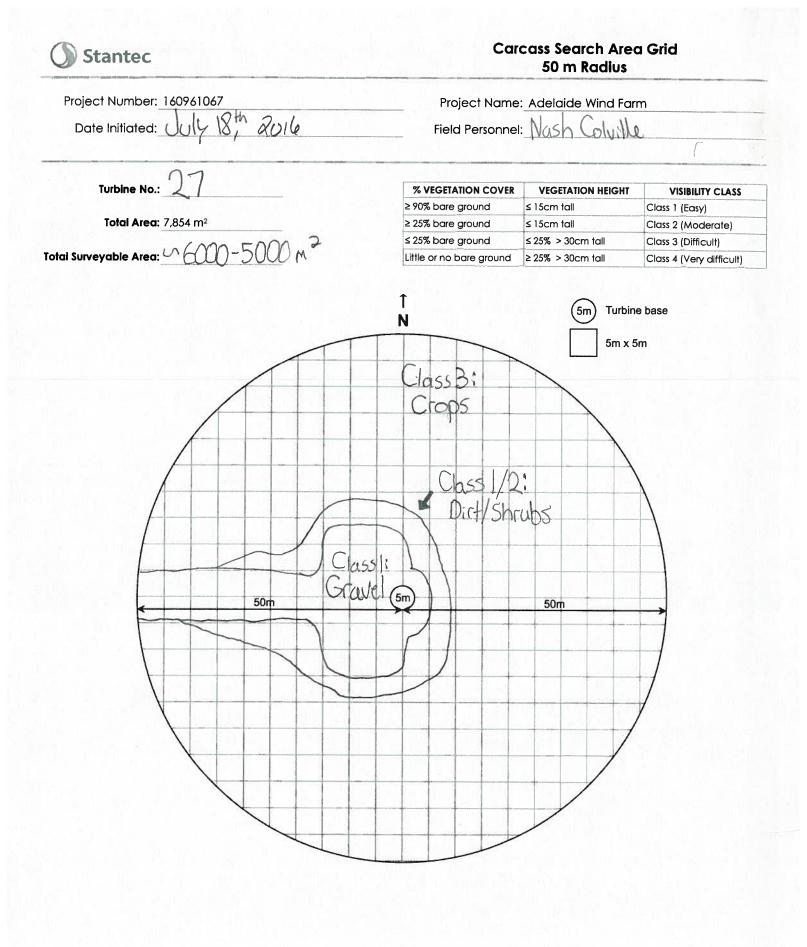
Stantec	Car	cass Search Are 50 m Radius	a Grid
Project Number: 160961067	Project Name	: Adelaide Wind Far	m
May 17th 7011			
Date Initiated: May 12th, 2016	Field Personnel	Nash Colu	ine
	% VEGETATION COVER ≥ 90% bare ground	VEGETATION HEIGHT ≤ 15cm tall	VISIBILITY CLASS
Total Area: 7,854 m²	≥ 25% bare ground	≤ 15cm tall	Class 1 (Easy) Class 2 (Moderate)
	≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
otal Surveyable Area: $7,854m^2$	Little or no bare ground	≥ 25% > 30cm tall	Class 4 (Very difficult)
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Date Initiated: Sept 872016	Field Personnel	Den Ila	vi.
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150.2	≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
tal Surveyable Area: 1550m2	Little or no bare ground	≥25% > 30cm tall	Class 4 (Very difficult)
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Turbine	Area	Start	End Time	Duration	Species	Sex	Bat Forearm ¹		UTM Coor	dinates	Decomposition		injury ³	Distance from	Direction from	Substrate	Visibility	Photo #
No.	(m²)	Time		K.	species	(m/f/u)	(mm)	Zone	Easting	Northing	Code ²	Since Death	Sustained	Turbine (m)			Class ⁴	
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Mortality Survey Observation Form

	Date: nd Time: Weather onditions: ⁻		2 221 C) 221	<u>OIG</u> <u>H:OOpm</u> Km/n/SE WIND eed/directi	Partly	5747 96	Nash C O PPT		C) PPT (last 24-hi	Fresh	POSITION CODES ² : Moderate Advanced	Complete Scavengec	≥ 90% bo ≥ 25% bo ≤ 25% bo	re ground	VEG. H ≤ 15cm tall ≤ 15cm tall ≤ 25% > 300 ≥ 25% > 300	c cm tall	VISIBILITY Class 1 (Easy Class 2 (Moo Class 3 (Diffic Class 4 (Very	/) derate) cult)
Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm ¹ (mm)	Zone	UTM Coord Easting	dinates Northing	Decomposition Code ²	Est. Hours Since Death	Injury ³ Sustained	Distance from Turbine (m	Direction from Turbine	Substrate	Visibility Class ⁴	Photo #
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3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

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Start/E	Project No: 160961067 Date: May 9th 2016 tart/End Time: 9:45 an 1 5:30 pm Weather 9 17 Km/h 1 SE Conditions: TEMP (°C) WIND					onnel:	Adelaide M Nash Col KIm	/ind Fr	arm <(m	DECOMI Fresh	POSITION CODES ² : Moderate	Complete	≥ 90% bo ≥ 25% bo	re ground	VEG. I ≤ 15cm tal ≤ 15cm tal ≤ 25% > 30	0	VISIBILITY Class 1 (Easy Class 2 (Mod Class 3 (Diffid	/) derat e)
C	onditions:	TEMP (°	C)	WIND beed/direct	CLC	DUD	РРТ	F	PPT (last 24-hr	s) Early	Advanced	Scavenged	Little/no	bare ground	≥ 25% > 30	cm tall	Class 4 (Very	/ difficult)
Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm ¹ (mm)	Zone	UTM Coord Easting	linates Northing	Decomposition Code ²	Est. Hours Since Death	Injury ³ Sustained	Distance from Turbine (m)	from	Substrate	Visibility Class ⁴	Photo #
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7	11	10:46	9 8	30min	Silver-haired	f	42.58mm	17	E 044 9626	N 476 2179	Early	24hrs	broken Ving	41m	NW	Dirt	1	T70509.
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Print Name & In	itial: Nash Colville N.C.
	(field notes author)

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	oject No: Date:	May	12th 21	016	Per		Adelaide V Nash Ce		arm				and S.	G. COVER		HEIGHT	VISIBILITY	CLASS ⁴
	art/End Time: 10:30an / 6:45pm Weather 16°C 20km/ / NE Partik cloudy Kim Conditions: TEMP (°C) WIND CLOUD PPT speed/direction								く(m PT (last 24-hr	Fresh	POSITION CODES ² : Moderate Advanced	Complete Scavenged	≥ 25% bo ≤ 25% bo	are ground are ground are ground bare ground	≤ 15cm tal ≤ 15cm tal ≤ 25% > 30 ≥ 25% > 30	I C Dom tall C	class 1 (Easy class 2 (Moo class 3 (Diffi class 4 (Ver	derat e) cult)
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urbine	Area	Start	Current			Sex	Bat		UTM Coor	dinates	Decomposition	Est. Hours	Injury ³	Distance	Direction		Visibility	
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Pro	ject No: Date:	1609610 May	26th	2016 4:30pm	Project Project	Name: /	Adelaide V	Vind F	arm le	-			% VE	G. COVER	VEG. H	IEIGHT	VISIBILITY	CLASS ⁴
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C	Conditions: TEMP (°C) 13km/ 15W Overcost 1-2mm WIND CLOUD PPT							<u>iin</u>	PPT (last 24-hr	Fresh s) Early	Moderate Advanced	Complete Scavengeo	-	are ground bare ground			Class 3 (Diffic Class 4 (Very	
8 	speed/direction								(-,,								
urbine	Area	Start	S. T. Sau		A State	Sex	Bat	Carlos and	UTM Coord	linates	Decomposition	Est. Hours	injury ³	Distance	Direction		Visibility	,
No.	(m²)	Time	End Time	Duration	Species	(m/f/u)	Forearm ¹ (mm)	Zone	Easting	Northing	Code ²	Since Death		from Turbine (m)	from Turbine	Substrate	Class ⁴	Photo
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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. (field notes author) $ac w: \verb+active+60961067+field_data+terrestrial+mortality_survey+2016+blank_data_forms+mortality-survey-observation_160961010.docx$

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	TYPES: Noi	ne Visible	on reverse / Broken	Limb / Bro	ken Neck / Bro		/ Cut in Ho	lif / D€	ecapitated	/ Head Injury /	Severed Wing /	nette gegyn		L'MARIPE (L) L'ANTRA (L)	meno al. Alfred	2.972,698	Charte Actionitia	the other
e la la	0				OF ame & Initial:	Nast	n Colu:		N.G.)	P	Quality Co rint Name & I	1		ingan			gible 🗗

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FORM 019 / REV: 2016-04-20

Stantec Mortality Survey Observation Form																			
Start/E		June 10:0	200 1 10 m / 12 18 Km/	2nd, 2010 Personnel: Noch Coluilly lam 1 5:00pm BKm/h 1 W Fair (30%) O							DECOMPOSITION CODES Fresh Moderate Early Advanced		≥ 90% bo ≥ 25% bo ≤ 25% bo	≥ 25% bare ground		≤ 15cm tall C ≤ 25% > 30cm tall C		VISIBILITY CLASS ⁴ Class 1 (Easy) Class 2 (Moderate) Class 3 (Difficult) Class 4 (Very difficult	
		Start	End Time	Duration	Species	Sex	Bat Forearm ¹			T	Decomposition		injury ³	from	Direction from	Substrate	Visibility	Photo	
No.	(m²)	Time				(m/f/u)	(mm)	Zone	Easting E	Northing N	Code ²	Since Death	Sustained	Turbine (m)			Class ⁴		
6		15-15	uction					19	F	N					<u> – 6 – 7 – 7</u>		-		
7	1854	10:15	10:45	Drind					-										
11	6598	10:50	11:20	30mins					E	N									
14	5250	11:25	11:55	3 mins	/	-aidites			E	N				14					
17	7015	12:00		A. A.P. & T. A.S. & T.	(tester) bat	/	/	17	E 044 4505	N 476 5068	Fresh		/	2M	NW	dirt	2		
19	7854	12:30		35 mins	/				E	N	A	<u>~</u>							
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Project No: 160961067 Project Name: Adelaide Wind Farm																		
Date: June 6th 2016 Personnel: Nach Colville											G. COVER	VEG. HEIGHT		VISIBILITY CLASS				
Start/End Time: 9:40am 12:50m							DECOM	DECOMPOSITION CODES2:						Class 1 (Easy) Class 2 (Moderate)				
Weather 20°C 21 Km/h/ W Overcust 50% O 3-5 m Conditions: TEMP (°C) WIND CLOUD PPT PPT (last 24-hrs)						Im Fresh Moderate Comple			≤ 25% bc			5% > 30cm tall C		Class 3 (Difficult)				
Conditions: TEMP (°C) WIND CLOUD speed/direction						PPT	PPT PPT (last 24-hrs)			Early Advanced		Little/no	bare ground)cm t all	Class 4 (Very difficult)			
urbine Area		Start	End Time	Duration	Smealer	Sex	Bat	UTM Coord		dinates	Decomposition	Est. Hours	Injury ³	Distance from	Direction from	Substrate	Visibility	Photo
No.	(m²)	Time		Duranon	Species	(m/f/u)	forearm ¹ (mm)	Zone	Easting	Northing	Code ²	Since Death	Sustained	Turbine (m)		SUDSITUR	Class ⁴	FIIOIO
6	4000	9:50	10:20	BOmins					E The two	N								
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e bat JURY T	forearm o YPES: Nor	liagram o le Visible	on reverse / Broken I	of page. Limb / Brol	ken Neck / Brol	l ken Wing	/ Cut in Hc	alf / De	capitated ,	/ Head Injury /	Severed Wing /	Wound to Abde	omen	inena ()	2000 - 2000 700 - 2000			

Pr	oject No:	1609610	067		Project I		Adelaide V							V 1.9	n Thursday	e Maria Casa A		
	Date:	June	972	016 4:00p	Pers	onnel:	Vash Cr	olu:	le					G. COVER		HEIGHT	VISIBILITY	
										DECOM	POSITION CODES ² :				≤ 15cm ta ≤ 15cm ta		Class 1 (Eas Class 2 (Mo	
4	Weather	15°C	17 Km	WIND	W Clear	(10%)	0		1-2m		Moderate	Complete			≤ 25% > 30		Class 3 (Diffi	
C	conditions:	TEMP (°		WIND eed/directi		DUD	PPT	F	PPT (last 24-h		Advanced	Scavenged	d Little/no	bare ground	≥ 25% > 30)cm tall	Class 4 (Ven	y difficult)
Turbine	Area	Start				Sex	Bat		UTM Coor	dinates	Decomposition	Est. Hours	Injury ³	Contract of the second s	Direction		Visibility	,
No.	(m ²)	Time	End Time	Duration	Species	(m/f/u)	Forearm ¹ (mm)	Zone	Easting	Northing	Code ²	Since Death		from Turbine (m)	from Turbine	Substrate	Class ⁴	Photo #
6			frame.	25mins	Commission of the second se				E _{ren} Vation	N								
7	7854	11:10	11:40	30 mins			A.		E	N								
11	4500	11:45	12:15	30mins	Bat SilverHaired Bu	U	41.38mm	17	E 044 9160	N 476 3628	Moderate	48hrs	Broken Wing	10	NE	Grave	1	T1106092
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17	6500	12:45	1:15	BOmins					E	N								
19	7854	1:15	1:45	30m:05				-	E	N								
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22	7854	2:25	2:55	30 min					E	Ν					inge the	ŧ.		
27	Contraction of the second second		-	35mins			fill of		E	N								
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INJURY	TYPES: Nor	ne Visible	on reverse / Broken L	.imb / Brok	en Neck / Brok	en Wing	/ Cut in Ha	alf / Do	ecapitated ,	I / Head Injury ,	/ Severed Wing /	Wound to Abc	lomen)-9(1-42	JAN N	104201010	argita da	Contra a
Real to	A(042)	1012		PAGE_	1 OF	2 GX	1001		and the second	ni jeon je	10.450005(01-000)	Quality Co	ntrol:		1. 1. 1. 26.8	m is comp	lete R & le	egible P

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Start/E	nd Time:	June 11:20	213th, am / 15kn c)	4:350	Per <u> Per</u> <u> Over</u> <u> Over</u> <u> CLC</u>		Adelaide V Vash C) 1-20 PPT	olv:II		Fresh	POSITION CODES ² : Moderate Advanced	Complete	≥ 90% bo ≥ 25% bo ≤ 25% bo	G. COVER are ground are ground are ground bare ground	VEG. I ≤ 15cm tall ≤ 15cm tall ≤ 25% > 30	HEIGHT I I Docm tall	VISIBILITY (Class 1 (Easy Class 2 (Moo Class 3 (Diffic Class 4 (Very	CLASS ⁴ /) derate) cult)
Turbine	Area (m ²)	Start Time	End Time	Duration	Species	Sex	Bat Forearm ¹	<u>.</u>	UTM Coor	The state	Decomposition		Injury ³	Distance from	Direction	Substrate	Visibility	Photo #
No.	Part of the second		12:00			(m/f/u)	(mm)	Zone	Easting E	Northing N	Code ²	Since Death	Sustained	Turbine (m) Turbine		Class ⁴	
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	TYPES: Nor	ne Visible		imb / Brol	ghender		/ Cut in Ho	ulf / De	ecapitated ,		Severed Wing /	Advice (Balde) Selection	(สมัยงอง) (ประกับ)	$(1, \frac{1}{2}, \infty > 1)$ (-1)	a ting	20192LUIS	· 大同学的由中心	
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C	Weather	30)	- 1 - 6	(ø		·ø	Fresh	Moderate	Complete	≤ 25% bo	re ground	≤ 25% > 30	cm tall	Class 3 (Diffic	cult)
	inamons.	TEMP (°		WIND eed/direction		OUD	PPT	Р	PT (last 24-h	rs) Early	Advanced	Scavenged	Little/no	bare ground	≥ 25% > 30	cm tali	Class 4 (Very	difficult)
urbine	Area	Start				Sex	Bat		UTM Coor	dinates	Decomposition	Est. Hours	injury ³	Distance	Ŧ		Visibility	Photo
No.	(m²)	Time	End Time	Duration	Species	(m/f/u)	Forearm ¹ (mm)	Zone		Northing	Code ²	Since Death	Sustained	from Turbine (m)	from Turbine	Substrate	Class ⁴	Photo
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Start/E	nd Time:	10:4	20th Dam 1	1	Project	Name: A sonnel:	Adelaide V Nash C	Vind Fo	arm L	_	DECOM	POSITION CODES ² :		≥ 90% bc		VEG. I ≤ 15cm tal ≤ 15cm tal		VISIBILITY Class 1 (Easy Class 2 (Mod	/)
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Turbine No.	Area (m ²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm ¹ (mm)	Zone	UTM Coord Easting	T	s rthing	Decomposition Code ²	Est. Hours Since Death	Injury ³ Su s tained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class ⁴	Photo #
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NJURY	TYPES: Nor	ne Visible	/ Broken I	_imb / Brol	ken Neck / Bro	ken Wing	/ Cut in Ho	alf / De	ecapitated /	' Head	l Injury /	/ Sev e red Wing /	Wound to Abd		Recovere NaiSecti Koli	chiaox/	on Jun	()(). 197-	ne 15"
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Pro Start/E	oject No: Date: nd Time:	160961	067 2300	, 2016 4:30p	Project	Name: A connel:	Adelaide V Nash C	Vind Fc	ırm C					G. COVER	VEG. I ≤ 15cm tall	IEIGHT	VISIBILITY Class 1 (Easy	CLASS ⁴
с	Weather onditions:	22° TEMP (°	C 14"	WIND	E Over	cost (40)%) () PPT	P	PT (last 24-hr	Fresh	POSITION CODES ² : Moderate Advanced	Complete	≤ 25% bo		≤ 15cm tall ≤ 25% > 30 ≥ 25% > 30	cm tall	Class 2 (Moc Class 3 (Diffic Class 4 (Very	cult)
Turbine		Start	End Time	Duration	Species	Sex	Bat Forearm ¹		UTM Coord	the second second	Decomposition		injury ³	Distance from	Direction from	Substrate	Visibility	Photo
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Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm ¹	Zone	UTM Coord Easting	dinates Northing	Decomposition Code ²	Est. Hours Since Death	Injury ³ Sustained	from	from	Substrate	Visibility Class ⁴	Photo
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	Diject No: Date: Ind Time:	Jun	e 29	t. 2016	Project	Name: /	Adelaide V Nash	Wind F	arm v:11e	_			% VE	G. COVER	VEG. I ≤ 15cm tall		VISIBILITY Class 1 (Eas)	
T.X.	Weather	070	CCKM	h i N		05(5%)	n n		vin		POSITION CODES ² : Moderate	Complete	100 H 100 H 100 H 100 H	are ground	≤ 15cm tall ≤ 25% > 30		Class 2 (Mod Class 3 (Diffi	
c	conditions:	TEMP (°	C)	WIND eed/directi	CL	OUD	PPT		PPT (last 24-t		Advanced			bare ground			Class 4 (Ven	
Turbine	Area	Start	and a			Sex	Bat		UTM Coo	rdinates	Decomposition	Est. Hours	Injury ³	Distance	Contraction of the second seco		Visibility	
No.	(m ²)	Time	End Time	Duration	Species	(m/f/u)	Forearm ¹ (mm)	Zone	Easting	Northing	Code ²	Since Death		from Turbine (m	from) Turbine	Substrate	Class ⁴	Photo #
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(field notes author) ac w:\active\60961067\field_data\terrestrial\mortality_survey\2016\blank_data_forms\mortality-survey-observation_160961010.docx (field notes QA/QC personnel) FORM 019 / REV: 2016-04-20

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Turbine No.		Start Time	sp	eed/direct		Sex (m/f/u)	Bat Forearm ¹	Zone	UTM Coor Easting	dinates Northing	Decomposition Code ²	Est. Hours Since Death	Injury ³ Sustained	Distance from	Direction from	Substrate	Visibility Class ⁴	Photo #
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14	3000	1:25	1:55	30mr		Z.Y	361 E		E	N								
17	6500	2:00	2:30	30 mir					E	Ν								
19	7854	2:35	3:05	30 min					E	N				· · · · · · · · · · · · · · · · · · ·				
20	7854	3:10	3:40	30min	European Starling	F	/	17	E044 7203	N 476 4935	Early	224hr	broken neck	<1	N	grave	1	T2007(2016)
22	7854	3:45	4:15	30min				-	E	N								
27	7854	4:20	4:50	30m.c				-378	E	N							ae ins	
				_				: .	E	N		2						
INJURY	forearm o TYPES: Nor	ne Visible	on reverse / Broken i	Limb / Bro	ken Neck / Bro) / Cut in Ho	alf / D	ecapitated	N / Head Injury .	/ Severed Wing /	al company		Niros Lui 196		entra pa		101940 A
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	Date:	JULV	7th 2	016 4:000	Per		Adelaide V			_				G. COVER	VEG. I ≤ 15cm tall		VISIBILITY Class 1 (Easy	
				1		176	No.			DECOM	POSITION CODES ² :			are ground	≤ 15cm tall		Class 2 (Mod	- Area and a second
	Weather	26	<u>5 5 km</u>	his	IN Fair	(30%)	0	S	1-3m		Moderate	Complete			≤ 25% > 30		lass 3 (Diffie	
С	onditions:	TEMP (°C		WIND eed/directi	CLC		PPT		PPT (last 24-h		Advanced	Scavenged	Little/no	bare ground	≥ 25% > 30	cm tall (Class 4 (Very	difficult
urbine	Area	Start	Come -	N		Sex	Bat	1	UTM Coor	dinates	Decomposition	Est. Hours	Injury ³	Distance	Direction		Visibility	1
No.	(m²)	Time	End Time	Duration	Species	(m/f/u)	Forearm ¹ (mm)	Zone	-	Northing	Code ²	Since Death		from Turbine (m	from Turbine	Substrate	Class ⁴	Photo
6	3500	10:30	11:00	30 mins	/			律	EAGLA ADERINA	N							173	
11	6.500	11:05	11:35	30 mins					E	Ν								
12			12:10			4			E	N								
14	4000	12:15	12:45	30 mins	/	Ennig			E	N						i Negeria	nd T	
17	0.00 Langet 1907	AN COROLING	A DATE OF THE	ENINGE		417			E	N								
19	6510	1:25	1:55	30 mins	/	4.0			E	N								
20	7854	2:00	2:30	Drins	/				E	N								
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See bat	forearm o	liagram c	on reverse of / Broken L	of page. imb / Brok	en Neck / Bro	ken Wing	/ Cut in He	lif / De	ecapitated	/ Head Iniury /	Severed Wing /	Wound to Abd	omen					
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Pro Start/E	oject No: Date: nd Time:	160961 July 10:5(067 11H2 201	3:50	Per.	Name: / sonnel:	Adelaide V Nash C	Wind F	arm	 	POSITION CODES ² :		≥ 90% b		VEG. ≤ 15cm tal ≤ 15cm tal		VISIBILITY Class 1 (Eas) Class 2 (Mod	y)
c	Weather onditions:*	TEMP (°	C) 16Km sr	WIND weed/direct		cast(70	9 <u>6) ()</u> PPT		PPT (last 24-h	Fresh	Moderate Advanced	Complete	≤ 25% bo		≤ 25% > 30)cm tall	Class 3 (Diffi Class 4 (Ven	icult)
Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm ¹ (mm)	Zone	UTM Coor Easting	dinates Northing	Decomposition Code ²	Est. Hours Since Death	Injury³ Sustained	Distance from Turbine (m)	from	Substrate	Visibility Class ⁴	Photo #
6	3500	11:00	11:30	BOMINS	/		1		E Dirette	N					4			
7	7854	11:35	12:05	SONIAS	(tester)	/	/	17	E 044 9681	N 476 2588				2	N	gross	2	/
11	6500	12:10	12:40	30000	Bird (tester)		/	117	E 044 9165	N 476			/	38	SE	grave		
12	4500	12:45	1:15	30 min		Ng Qing			E	N								
14	4000	1:20	1:50	30 mins	Bat (tester)			17	E 044 7167	N 476 4830			/	24	SW	growel	1	
17	6500	1:55	1:20	Brie	/			215-	E	N		- 151				The Fill		
19	6500	2:25	2:55	30min	/				E	N			-					
20	Road	Bloc	Kcd/	Road	Construc	tion	-		E	N								
22	Tuch	nine	Ma	Here	nce				E	N								
27	7854	3:10	3:40	BOMINS	/				E	N							22	
								11 77 - 11	E	N								
							4		E	N							· · · · · · · · · · · · · · · · · · ·	
See ba	t forearm o TYPES: Nor	ne Visible	on reverse / Broken	Limb / Brol	ken Neck / Bro		/ Cut in Ho	l alf / D	ecapitated	I / Head Injury ,	/ Severed Wing /	Wound to Abd		Tanta Tanta	VALUES VALUES	sapanara	1. A.A.	1000
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	bject No: Date: nd Time:			1:300	Pe		Adelaide V Nash C								G. COVER	VEG. H ≤ 15cm tall		VISIBILITY Class 1 (Easy	
		0.10	Given	1	1		6 4 0				DECOM	POSITION CODES ² :			re ground	≤ 15cm tall		Class 2 (Moc	lerate)
с	Weather onditions:	JUL TENAD 190	- ICKU	WIND	N Part	G Cloudy (2011 O PPT		PPT (last 24-	brel	Fresh	Moderate Advanced	Complete		re ground bare ground	≤ 25% > 30		Class 3 (Diffic Class 4 (Very	7.2. 111 11
	N.B.			eed/directi		000				1113)	Early	Auvunceu	Scavenged			2 23 78 7 30		21033 4 (1 61 9	ameony
Turbine	Area	Start				Sex	Bat	2		ordinate	es	Decomposition	Est. Hours	injury ³		Direction		Visibility	
No.	(m²)	Time	End Time	Duration	Species	(m/f/u)	Forearm ¹ (mm)	Zone	Easting	No	orthing			Sustained	from Turbine (m)	from Turbine	Substrate	Class ⁴	Photo
6	3500	11:00	11:30	30min	/				E. Metrolation	N									
7	7854	11:35	12:05	30 mm	/		100		E	Z									
K	7854	12:10	12:40	30min	/		and Ch		E	N									
12	4500	12:45	1:15	Donio	/	e =_0(8,0)			E	N									
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		1		1					E	N			2.5						
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(field notes QA/QC personnel) FORM 019 / REV: 2016-04-20

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Pro	Stan		067	- 16	Project		delaide V											
	Date:	dulo	8th, 21	016	Per		Nash C						% VE	G. COVER	VEG. H	IEIGHT	VISIBILITY	CLASS ⁴
Start/Er	nd Time:	10:3	Samil	4:15pm	and the first state	- I					POSITION CODES?				≤ 15cm tall		Class 1 (Easy	
Train The	Weather	260	< 18Kr	VLIN	11 2.16	and	m ar		-	Fresh	POSITION CODES ² : Moderate	Complete			≤ 15cm tall ≤ 25% > 30		Class 2 (Mod Class 3 (Diffic	
Co	onditions:	TEMP (°	C)	WIND eed/direct	ion	DUD	PPT	P	PT (last 24-hi	rs) Early	Advanced	Scavenged		bare ground	≥ 25% > 30		Class 4 (Very	
urbine	Area	Start	1			Sex	Bat		UTM Coor	dinates	Decomposition	Est. Hours	Injury ³	Distance	Contract of the second s		Visibility	
No.	(m²)	Time	End Time	Duration	Species	(m/f/u)	Forearm' (mm)	Zone	Easting	Northing	Code ²	Since Death		from Turbine (m)	from Turbine	Substrate	Class ⁴	Photo
6	500	0:45	11:15	BONINS					E Antiti Shanden	Ν								
7	Mair	tenc	nce	1914 -	16			No the	E	Ν								
1	7500*	11:20	1. 12	30mins		45	and the second		E	Ν								
12	7000*	11:55	12:25	30mins	/	200 Tag			E	N					ш			
14	4000	12:30	1:00	Burns	/				E	Ν								
17	7500	1:05	1:35	Dnins	/		44		E	Ν								
19	\$500	1:40	2:10	30mins					E	Ν								
20	7854	2:15	2:45	Drins	/				E	Ν			2					
22	7854	2:50	3:20	Dmins					E	Ν								
21	7854	3:25	4:00	350.00					E	Ν								-
						TOT LET				Ν								
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NJURY T	forearm of YPES: Norr E PSC	diagram a ne Visible	on reverse / Broken L 7 CW	imb / Brok	en Neck / Bro	The state of the s	= Duoterk	. 1	ecapitated ,	Head Injury	Severed Wing /	Wound to Abd	omen	garper (* 17) garper (* 17)	1.47.228	2011-24/25/	CLODA.	Signito
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	oject No: Date: ind Time:	: Jul-	067 7215F	2016	Project	Name:_ sonnel:_	Adelaide V Ndsh C	Vind Fo	arm L					G. COVER		HEIGHT	VISIBILITY Class 1 (Eas)	CLASS4
	Weather onditions:		CI IIKA			-(15%)	PPT	F	PPT (last 24-h	Fresh	Moderate Advanced	Complete	≤ 25% bo		≤ 15cm tal ≤ 25% > 30 ≥ 25% > 30	I (Ocm tall (Class 2 (Mod Class 3 (Diffi Class 4 (Very	derate) icult)
Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm ¹ (mm)	Zone	UTM Coor	dinates Northing	Decomposition Code ²	Est. Hours Since Death	Injury³ Sustained	Distance from Turbine (m)	from	Substrate	Visibility Class ⁴	Photo #
6	5000	10:50	11:20	30 mins	Bat (tester)	/	/	17	E063 1851	N 475 0720				2	E	dirt	-	1
7	7854	11.25	11:55	Bonins	/		2		E	N								
11	7500	12:00	12:30	Burners	N I				E	N								
12	7000	12.35	1:05	David	(tester)			17	E044 7852	N 476 3379				23	NW	grave		/
14	4000	1:10	1:40	30hons						N					2-1-			
17	7500	1:45	2:15	30 mins					E	N		/						
19	6500	2:20	2:45	25min	(tester)			11	E044 2993	N 476 4988			/	39	NE	dirt	-1	/
20	7854	2:50	3:20	Bunn					-	N			10 10 10			10		
22	7854	3:25	4:05	Some					E	N								
27	7854	4:10	4:40	Dmins					E	N					atele	<u></u> eno	803	
							* -		E	Ν								
-		144			ê de An				E	N								
I See ba 3 INJURY	TYPES: Nor	ne Visible		of page. Limb / Bro		ken Wing	/ Cut in Hc	alf / De	ecapitated	/ Head Injury ,	/ Severed Wing /	Wound to Abc		Areas Leadar (197		antralisers?	1.0+14 2.0000000	Miato e
in norm					OF	Nas			otes author		P	Quality Co rrint Name & I	ontrol:		errig an	VQC perso	æ	-

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Start/E	oject No: Date: End Time: Weather Conditions:	11:2	26th - 5am / 5am /	WIND eed/direct	me m W Party Cl	Name: sonnel: Claud OUD	Adelaide V Noch Cd (256) C PPT)	PT (last 24-h	Fresh	POSITION CODES ² : Moderate Advanced	Complete	≥ 90% bo ≥ 25% bo ≤ 25% bo	are ground	VEG. I ≤ 15cm tal ≤ 15cm tall ≤ 25% > 30	HEIGHT	VISIBILITY Class 1 (Easy Class 2 (Moo Class 3 (Diffi Class 4 (Very	CLASS ⁴ () derate) cult)
Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm ¹	Zone	UTM Coor Easting	dinates Northing	Decomposition Code ²	Est. Hours Since Death	Injury ³ Sustained	from	Direction from	Substrate	Visibility Class ⁴	Photo #
6	5000	11:35	12:00	25min			(mm)		E	N				Turbine (m)	Turbine			
7	7854	12:05	1 1	0.00					E	N								
11	7000	12:35	1:05	30mins		S	1		E	N				1.042				
12	7000	1:05	1:35	30mins		California.			E	N					-572			
14	4000	1:40	2:65	25 mins	/	1.1.			E	N								
17	7600	2:10	2:35	25mm					E F	N								
19	Mar	A COLORED AND A COLOR	10101120-001-0020						E	N			b					
26	7854	2:40	3:10	Somo	Hoary	F	47mm	17	E044	N 476 5051	Early	24hrs	Broken Wind	2	NE	grave	1	T20072
22	7854	3:15	3:45	30mins					E	N								
21	Roo	Blo	ted/	Cons	truction					Ν				8				
										Ν			1)					
									112	Ν							8	
INJURY	t forearm of TYPES: Nor	diagram (ne Visible	on reverse / Broken I	imb / Bro	ken Neck / Bro	oken Wing Nas	shC.		ecapitated ,		/ Severed Wing /		ntrol:		ligan	m is comp	æ	egible D

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Start/E	oject No: Date: End Time: Weather Conditions:	08:4	29th 2 Dam / Cl (Kr	2:55	<u>Per</u> <u>M</u> <u>DE</u> <u>OVerc</u> CLC		Adelaide V Vash Pash Pash Pash PPT	and a		Fresh	POSITION CODES ² Moderate Advanced	Complete	≥ 90% bo ≥ 25% bo ≤ 25% bo	G. COVER are ground are ground are ground bare ground	VEG. ≤ 15cm tal ≤ 15cm tal ≤ 25% > 30	HEIGHT	VISIBILITY Class 1 (Eas) Class 2 (Moo Class 3 (Diffi Class 4 (Ver)	CLASS ⁴ y) derate) icult)
Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm ¹ (mm)	Zone	UTM Coor	dinates Northing	Decomposition Code ²	Est. Hours Since Death	Injury ³ Sustained	Distance from Turbine (m	Direction from Turbine	Substrate	Visibility Class ⁴	Photo #
6	500	18:51	9:20	25min				1 Al	E MAN GUUNEM	N					Torbine			
7	7854	9:25	9:55	Dmins	Bird (tester)	/	/	17	E 044 9649	N 476			/	21	54	Crops	2	
11	7000	10:00	10:30	30mino	BigBrouk	M	41,5m		E 044 9180	N 476 3608	Fresh	K24hr	N/A	32	SE	grave	11	111072920
12	7000	10:39	11:05	30m.05	/	ofistor			E	N								
14	4000	1:10	11:40	30min	Bird (tester)	/	/	17	E 044 7151	N 476 4844			/	20	W	dirt		
17	GGD	11:地	12:15	BOmins	(tester)	/		17	E 044 4508	N 476			/	15	5	Crops	52	
19	6000	12:25	12:55	ComOE	/				E	N								
20	7854	1:00	1:30	30mins					E	N								
22	7854	1:35	2:05	BOmin					E	N			18. J.					
27	7854	2:10	2:40	30minoE					E	N							51.5	
								de la	E	Ν							L. AND	
			olei	 11			2000 - 1900 2000 - 1900		E	Ν								
3 INJURY	t forearm TYPES: Not	ne Visible		Limb / Brol	ken Neck / Brol		/ Cut in Ho	alf / De	ecapitated ,	I / Head Injury /	/ Severed Wing /	Wound to Abc	unaria anaria	ristio (k. kolu	HORE .	m is compl	a frank	
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Pro	ject No:	1609610	67		Project		Adelaide V											
	Date:	Auc	ust 2	ind 20	16 Pers		Nash (- Mala				G. COVER		HEIGHT	VISIBILITY	
	nd Time:		Bam/	4:55	V	_				DECOM	POSITION CODES2:				≤ 15cm tal ≤ 15cm tal		Class 1 (Eas) Class 2 (Mod	
C	Weather	30	<u>6 27</u>	Kult (5 Fairl	(15%)	0		~3-5m	m Fresh	Moderate	Complete	≤ 25% bo	are ground	≤ 25% > 30	cm tall	Class 3 (Diffi	cult)
		Temp (°0		WIND eed/direct		DUD	PPT		PPT (last 24-h	rs) Early	Advanced	Scavenged	d Little/no	bare ground	≥ 25% > 30	icm tall	Class 4 (Ver)	/ difficult)
ſurbine	Area	Start	Par d Thurs			Sex	Bat		UTM Coor	dinates	Decomposition	Est. Hours	Injury ³	No. of the second se	Direction		Visibility	
No.	(m²)	Time	End Time	Duration	Species	(m/f/u)	Forearm ¹ (mm)	Zone	Easting	Northing	Code ²	Since Death		from Turbine (m)	from Turbine	Substrate	Class ⁴	Photo #
6	6000	11:00	11:25	250:05					E. Servekov	N								
7	6500	11:30	12:00	Dmins	/		Ser V		ε	N								
			12:35			14			E	N								
12			1:10			চার্যার্জন		192	E	N								
14					Hoary Bat	U	52mm	17	E 044 7162	N 476 4872	Moderate	48hrs	Decap:tat	28m	W	Crops	2	T140807
	NC 1871		ance						E	N	annes de la							
19	to be a state of the		2:20	1				1263	E	N								
20	5400	3:11)	3:30	North					Ε	N		2						
	500	2.25	4:05	30mins					E	N								
77	0.600	1	Min and	4					E	N								
18			2.EC	E	/				E	N								
20	1854	4.10	4.41	SUMDE M	/				E	N								
20 See bat		liagram o	n reverse o	JUMINS of page.	/										S		1	
		e Visible		imb / Bro			/ Cut in Hc		ecapitated ,	/ Head Injury	/ Severed Wing /	Wound to Abd	lomen					
12 9 70%	Party	3121) 		PAGE	1 1	368		,	The second second	A CARL	and the second	Quality Co	ntrol:	(1656) Calendaria	A MILLS	m is comp	lete 🖬 & le	aible P
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Start/E	nd Time:	Augu 9:50	<u>st 47</u> am 1 <u>19kn</u>	2016 2:50 pr %h / 5 WIND eed/directi	Per <u> </u>	Name: / rsonnel: _ www.s(15%) OUD	Adelaide V Nash Ca) O PPT	luille	PT (last 24-hr	Fresh	POSITION CODES ² : Moderate Advanced	Complete	≥ 90% bo ≥ 25% bo ≤ 25% bo	ire ground	≤ 15cm tall ≤ 15cm tall ≤ 25% > 30	cm tall	VISIBILITY Class 1 (Easy Class 2 (Moo Class 3 (Diffie Class 4 (Very	/) derate) cult)
Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm ¹	Zone	UTM Coord Easting	finates Northing	- Decomposition Code ²	Est. Hours Since Death	Injury ³ Sustained	from	Direction from	Substrate	Visibility Class ⁴	Photo #
	1	10	10:25	25trins	/		(mm)		E	N				Turbine (m)	Turbine			
				25mins				and the second	E	N								
11			11:35		/		and a second s		E	Ν								
12			12:10	+	/	in the second			E.	N					0			
14	3000	12:15	12:45	Jans					E	N								
17	6500	12:50	1:15	25 ms					E	N								
19	Mai	iten	anæ			-			E	N								
	Maint			-						N								,
12	6000	1:20	1:50	30mins.		_		n sins		N						-		
27	6000	1:55	2:25	Drins						N								
				4 22					E	Ν			15					
	foregrad	tiggram	on reverse	of page						N								
NJURY 1		e Visible	/ Broken L	.imb / Brok	256.0463		/ Cut in Ho	alf / De	ecapitated /	Head Injury /	Severed Wing /	Wound to Abd		i daneje ivan Do ali	Math.	જીવાગ્યતિન	GJUIS NREAMS	La salan
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Start/E	iject No: Date: nd Time: Weather	Augu	15t 8t	h, 2016 5:50	Per	sonnel	Adelaide V Nach Ca				POSITION CODES ² : Moderate	Complete	≥ 90% bo ≥ 25% bo	are ground	VEG. 1 ≤ 15cm tal ≤ 15cm tal ≤ 25% > 30	1	VISIBILITY Class 1 (Easy Class 2 (Moo Class 3 (Diffic	/) derate)
С	onditions:	TEMP (°	<u>с 14 Кі</u> с) sp	WIND wind		DUD	(<u>30%)</u> PPT	/ P	PT (last 24-hr	resh rs) Early	Advanced	95 d		bare ground			Class 4 (Very	
Turbine	Area	Start		Dunalia	Constant	Sex	Bat	1.5.	UTM Coord	dinates	Decomposition	Est. Hours	Injury ³	1	Direction		Visibility	Dhat
No.	(m²)	Time		Duration	Species	(m/f/u)	Forearm ¹ (mm)	Zone	Easting	Northing	Code ²	Since Death		from Turbine (m)	from Turbine	Substrate	Class ⁴	Photo
6	6250	11:50	12:20	3000.05					E Trag Settism	N								
7	6500	12:25	12:55	300.05				B	E	N						En la suite		
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12	7000	1:35	2:05	Dino		issilies)			E	N						- H For Paren		
14	3000	2:10	2:40	Dmins					E	N			i en		2			42.5
17	6000	2:46	3:15	Donio	/				E	Ν								
19	Mai	iten	ance						E	N								
20	5000	3:75	3:55	Dimins	(tester) Bird	/	/	17	E	Ν	/		/	20	W	Crops	2	1
22	5500	4:00	4:35	35min					E	Ν	-							
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INJURY	forearm (YPES: Nor	ne Visible		imb / Brol	2955690	ken Wing	/ Cut in Ho	alf / De	capitated /	 ' Head Injury ,	/ Severed Wing /	nute growt Reference	vallandea. Dânde		in an	7.57935.46	CRAN DORAN	, 199 6 ,
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Proj		1609610 Aug)67 1th 2	016			Adelaide W Nash (5			% VE	G. COVER	VEG. H	IEIGHT	VISIBILITY	CLASS ⁴
Start/En	d Time:)	1	1		- (10							≥90% bo	are ground	≤ 15cm tall		Class 1 (Easy	
T Star	(a.).	011	C ()2+	wind	E _ (SC)%) - lestoms	2.5		. la		POSITION CODES ² :			are ground	≤ 15cm tall		Class 2 (Mod	
Cc	Weather nditions:	14	_ 20	"Thi J	1hund	lestoms	3-31	<u>mm</u> _		Fresh	Moderate	Complete		are ground	≤ 25% > 30		Class 3 (Diffie	
	13	TEMP (°C		WIND eed/directi		DUD	PPT	F	'PT (last 24-hr:	;) Early	Advanced	Scavenged	t Little/no	bare ground	≥ 25% > 30	cm tall	Class 4 (Very	/ difficult)
Turbine	Area	Start				Sex	Bat		UTM Coord	linates		Est. Hours	Injury ³	Distance	1		Visibility	
No.	(m ²)	Time	End Time	Duration	Species	(m/f/u)	Forearm ¹ (mm)	Zone	Easting	Northing			Sustained	from Turbine (m	from) Turbine	Substrate	Class ⁴	Photo
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Start/E	oject No: Date: Ind Time: Weather onditions:	Aug. 10:00	Ust 15 Dam / C Cl	2016 4:00 M/h/ WIND weed/direct	Per DE Henne Clea	sonnel: \underline{N}	Adelaide V Jash C J-2mi PPT	SIN IN	<u>ں</u>	Fresh	POSITION CODES ² : Moderate Advanced	Complete	≥ 90% bo ≥ 25% bo ≤ 25% bo	are ground	VEG. F ≤ 15cm tall ≤ 15cm tall ≤ 25% > 30 ≥ 25% > 30	cm tall	VISIBILITY Class 1 (Easy Class 2 (Moa Class 3 (Diffic Class 4 (Very	r) derate) cult)
Turbine		Start	End Time	Duration	Species	Sex	Bat Forearm ¹	R.L.		1	Decomposition Code ²		Injury ³	Distance from	Direction from	Substrate	Visibility Class ⁴	Photo #
No.	(m²) 5500	Time	10:35		1.	(m/f/u)	(mm)	Zone	Easting E	Northing N		Since Death	Sustained	Turbine (m)) Turbine		Class	
7	10000	1.1	11:05	and the second states of the second sec				E		Ν								
H	7000	11:10	11:40	30min				E		Ν			- ving - 1			n sin		
12	6750	11:45	12:15	Bown				E		N	1							
14	3000	12:20	12:45	25min				E		N								
17	5500	12:50	1:20	Drin				E		Ν						4.3-		-
19	4250	1:25	1:50	25min			42,131	E		Ν							-	
20	5000	1:55	2:25	30min			<u>म</u> ् गु अन्नव	E		N								
22	4500	2:30	3:00	Donin				E		N								
27	4750	3:05	3:30	15min				E		N				· · · · · · · · · · · · · · · · · · ·				
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120								Ε		N								
3 INJURY	t forearm TYPES: Noi	ne Visible	on reverse / Broken I	imb / Bro		ken Wing	/ Cut in Ho		capitated /	' Head Injury	/ Severed Wing /	suce gentil	्राज्यप्रधालम् इत्यायम्		26011)	m is comp	lete 🖬 & le	gible 🗹
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Start/I	oject No: Date: End Time: Weather Conditions:	Aug 10:3	$\frac{USF18}{CI}$	th 2010 4:00 Km/W N WIND weed/direct	6 Pe prin Fa: CL		Adelaide V Nash (O PPT	àlu:11:		Fresh	POSITION CODES ² : Moderate Advanced	Complete	≥ 90% bo ≥ 25% bo ≤ 25% bo	are ground	≤ 15cm tal ≤ 15cm tal ≤ 25% > 30	cm tall	VISIBILITY Class 1 (Easy Class 2 (Moo Class 3 (Diffie Class 4 (Very	y) derate) cult)
Turbin	e Area	Start				Sex	Bat		UTM Coord	dinates	Decomposition	Est. Hours	Injury ³		Direction		Visibility	, Dhasha
No.	(m²)	Time	1.1	Duration	Species	(m/f/u)	Forearm ¹ (mm)	Zone	Easting	Northing	Code ²	Since Death		from Turbine (m)	from Turbine	Substrate	Class ⁴	Photo #
6	6000	10:40	11:05	25 min				14		N								
7	6000	11:10	11:35	25min	/			5	E	N							· · · · · · · · · · · · · · · · · · ·	
11	7000	11:40	12:10	BOMin	/	100			E	N	1. 2 2							
12	1		nan			(hathj)-			E	N								
14	3250	12:15	12:45	Bomin	/	1			E	N								
17	-	12:50	· · · · · · · · · · · · · · · · · · ·	25min	/				E	N						-		
19	4000	1:20	1:45	25min					E	N						1 Provide		
20	5500	1:50	2:20	30min	(tester) Bird	/	/	17	e 044 0272	N 476 5232			/	8	54	grass		/
22	4500	2:25	2:50	25mm		-			E	N								
27	5000	2:55	3:25	30mm	(tester) Bat		\square	17	E043 5982 F	N 476 5480		/	/	21	NE	dirt	1	/
									E	N								12175 3. 0014
	t forearm o TYPES: Nor				ken Neck / Bro	oken Wing	/ Cut in Ho	blf / De	ecapitated /	Head Injury ,	 / Severed Wing /	Wound to Abc	lomen	e tan Gipped an giur a	fransissi 10 m			
	ive) 6094104	7) field da	ita) terrantria		OF	Nas			otes author		P	Quality Co rint Name & I	Δ.		an	m is comp	R	

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Start/E	Dject No: Date: Ind Time: Weather Conditions:	AUQ 9:35	15+22 inn / - 144r - 144r	2216 2:15p <u>% / NE</u> WIND eed/directi	Per Purth CL		pelaide W bsh ()) PPT	PPT (las	2 mm t 24-hrs)	DECOM Fresh Early	POSITION CODES ² : Moderate Advanced	Complete	≥ 90% bo ≥ 25% bo ≤ 25% bo	ire ground	VEG. I ≤ 15cm tall ≤ 15cm tall ≤ 25% > 30 ≥ 25% > 30	cm tall	VISIBILITY Class 1 (Easy Class 2 (Moc Class 3 (Diffid Class 4 (Very	/) derate) cult)
Turbine		Start	End Time	Duration	Species	Sex	Bat Forearm ¹	UTM	Coordinat	les	Decomposition		injury ³	Distance from	Direction from	Substrate	Visibility	Photo #
No.	(m²)	Time	Lind nine	Dorditon	species	(m/f/u)	(mm)	Zone Eas		orthing	Code ²	Since Death	Sustained	Turbine (m)		300311016	Class ⁴	
6	6000	9.45	10:10	25min	/		- Aller	E	N									
7	6000	10:15	10:40	25min	/			E	N									
11	7000	10:45	11:15	Dmin	/		and the second	E	N	1								
12	Ma	nter	nanc					E	N	n Line			29 BI	Senter i i				
14	3250			ninte	/			E	N				Yan î			-X		
17	Con	1	ction					E	N				v i v svan S					
19	3750	123 8 00	12:20		/			E	N									
20	6000		12:55		/			E	N				S. 195	1. 1.				
22	4500	1:00	1:25	25min	/			E	N					e." ¥ 5				
27	5m	1:30	2:00	Dmin	/			E	N								1.000	
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1 See ba 3 INJURY	TYPES: Nor	ne Visible		imb / Brok PAGE_		oken Wing	/ Cut in Ha	lf / Decapito	ated / Hec	ad Injury /	Severed Wing /	Wound to Abo Quality Co rint Name & I	ontrol:	ma Con	i.e.u	m is comp		gible 🗹

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Pro	oject No:	1609610	067		Project	Name: /	Adelaide V	Wind Fe	arm									
	Date:	Aug	ust 26	5 201	6 Per	sonnel:	Nash	Colui	le	a perte			% VE	G. COVER	VEG.	HEIGHT	VISIBILITY	
Start/E	nd Time:	11:40) anal	4'.00pm	the state	1.0				_					≤ 15cm tal		Class 1 (Easy	
	Weather	7700	nx	mi, C	- Eur	(20%)	11		1300		POSITION CODES ² : Moderate	Complete	12 million 10 million 10 million		≤ 15cm tal ≤ 25% > 30		Class 2 (Mod Class 3 (Diffi	
С	Weather onditions:	TEMP (%		WIND			PPT		PT (last 24-hi		Advanced			bare ground			Class 4 (Ver	
				eed/direct						cy Lony		tour ongoe		sere greene				
lurbine	Area	Start	2			Sex	Bat	6.73	UTM Coor	dinates		Est. Hours	Injury ³	and the second s	Direction		Visibility	,
No.	(m²)	Time	End Time	Duration	Species	(m/f/u)	Forearm ¹ (mm)	Zone	Easting	Northing	Code ²		Sustained	from Turbine (m)	from Turbine	Substrate	Class ⁴	Photo #
6	6250	11:50	12:15	25m					E	N								
7	6000	12:20	12:45	25 min				14	E	N	Bar Sar							
11	Mu	Mai	nteno	nce					E	N					No.			
12	6750	12:50	1:20	30min		g téal			E	N								
14	3250	1:25	1:50	$25 \min$	/				E	N								
17	M/h	Cont	struc	rion -					E	N	-=							
19	3750	1:55	2:20	$25 \min$	/			161	E	N								
20	6500	2:25	2:55	30 min					E	N				S				
22	4500	3:00	3:25	25min	Red But	F	43mm	11 1 1	322	N 4763 208	Fresh	(24.hrs	broken neck	16	E	gravel	1	1220826
27	5000	3:30	3:55	25min						N								-
			101		44-7 ²			13		N								
See ba INJURY	forearm o TYPES: Nor	diagram o ne Visible	on reverse / Broken L	of page. .imb / Bro	ken Neck / Bro	ken Wing	/ Cut in Ho	alf / De	capitated /	Head Injury	/ Severed Wing /	Wound to Abd	omen				·	
														(100) (100)			Nicto's	sinto n
				PAGE	OF		-12	-	-0.1767	Action Martin		Quality Co	ntrol:	TURCE/TO S	This for	m is comp	iete 🖸 & le	eaible 🕑

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Start/E	oject No: Date: nd Time: Weather onditions:	Aug	C) 241	4:35,	Per Per Ford CLC		Adelaide V Nash O PPT	Col		Fresh	POSITION CODES ² : Moderate Advanced	Complete	≥ 90% bo ≥ 25% bo ≤ 25% bo	are ground	≤ 15cm tal ≤ 15cm tal ≤ 25% > 30	l Dom tall	VISIBILITY Class 1 (Easy Class 2 (Moo Class 3 (Diffic Class 4 (Very	/) derate) cult)
Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm ¹ (mm)	Zone	UTM Coor	dinates Northing	Decomposition Code ²	Est. Hours Since Death	Injury ³ Sustained	Distance from Turbine (m)	from	Substrate	Visibility Class ⁴	Photo #
6	6500	11:16	11:40	25min	(tester) Bat	/	/	17	E 045	N 476 2594				16		grass	2	/
7	6000	11:45	12:10	25min	(tester) Relator		/	17	E044 4630	N 476 2142				29	N	gravel	1	/
	7000	12:20	12:45	25min	(tester) Bas			17	E044 9630	N 476 2142			/	46	NW	gravel	1	/
12	6750	12:50	1:15	25min		2000	·		E	Ν								
14	3250	1:20	1:50	30min	/				E	Ν								
17	5600	1:55	2:20	$25 \min$	/				E	N	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -							
19	3200	2:25	2:50	25min			a	-10	E	Ν								
20	7(00)	2:55	3:20	25min					E	Ν								
22	4500	3:25	3:50	25min					E	Ν								
27	5000	3:55	4:25	Bund					E	Ν								
								19. y	E	Ν								
									E	N					1			
INJURY	forearm o TYPES: Nor	ne Visible	on reverse / Broken L	imb / Brol	ken Neck / Bro	ken Wing	/ Cut in Ho	alf / De	ecapitated ,	' Head Injury /	/ Severed Wing /		lomen	ghaoinn pour		uliades	dente Generalita	ous y
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	ject No: Date: nd Time:	Sh	Willo	Clept	Zat Jul Pers	Name:_ <u>A</u> onnel:			anie					G. COVER	VEG. I ≤ 15cm tall	IEIGHT	VISIBILITY Class 1 (Easy	
				1 / 1			M		0	DECOM	POSITION CODES2:			ire ground	≤ 15cm tal		Class 2 (Moc	
C			_ 10	KMIA	IW /.		U		0	- Fresh	Moderate	Complete		re ground	≤ 25% > 30		Class 3 (Diffic	
		TEMP (°		WIND eed/direct	CLC	UD	PPT	ŀ	PT (last 24-hrs)	Early	Advanced	Scavenged	Little/no	bare ground	≥ 25% > 30	cm tall	Class 4 (Very	difficult)
Turbine	Area	Start				Sex	Bat		UTM Coord	nates	Decomposition	Est. Hours	Injury ³	Distance	Direction		Visibility	
No.	(m²)	Time	End Time	Duration	Species	(m/f/u)	Forearm ¹ (mm)	Zone	Easting	Northing	Code ²	Since Death		from Turbine (m	from Turbine	Substrate	Class ⁴	Photo #
6	5501	11:30	12:00	30 min					E	N								
]/	1	M	1	nen				_	E	۷								
12	65/11		12:45	1			-		E	N								
14	IKAA	12:50		((E I	4								
17	/ (A	. 1	ue	tim	_			E	٧				and the second sec				
19	1750	1:25	155	11					E I	٨								
20	7850	2:10	2:30	(/					E 1	4								
22	2175		3:30	1					۲ E	4								
27		3:35		11					E r	4								
7			4:35	(E M	4								
	0-0	•		,					Ë N	1								
									E N	1								
										same-	L						1	

See bat forearm diagram on reverse of page.
 SINJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

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Pro	ject No: Date:	1609610	of the	at Gt		Name: <u>/</u>		/ind t	en le	-			% VE	G. COVER	VEG. F	IFIGHT	VISIBILITY	422410
Start/Fr	nd Time:	121	Vian /	5:45p	it wood in the		<u>Un</u>	a	- TINO						≤ 15cm tal		Class 1 (Easy	
			- pre-	0.100)	0.		0	DECOM	POSITION CODES2:				≤ 15cm tal		Class 2 (Moc	
	Weather	24	lok	mis	VC		0		0	Fresh	Moderate	Complete		ire ground	≤ 25% > 30		Class 3 (Diffic	the second s
Co	onditions:	TEMP (°C		WIND	CLO	DUD	PPT	F	PT (last 24-hr	rs) Early	Advanced	Scavenged		bare ground			Class 4 (Very	
		Ì		eed/direct						-,,					<u> </u>			annoony
Turbine	Area	Start	For d These	Duration	C	Sex	Bat		UTM Coord	dinates	Decomposition	Est. Hours	Injury ³		Direction		Visibility	
No.	(m²)	Time		Duration	Species	(m/f/u)	forearm ¹ (mm)	Zone		Northing	Code ²	I I	Sustained	from Turbine (m)	from Turbine	Substrate	Class ⁴	Photo #
7	1125	12:00	12:36	30 min					E	Ν								
6	5675	12:35	1:05	(1	/				E	N								
11	7475	1:10	1:40	(1	/				E	N								
12	7/06	1:45	2:15	11					E	N				<u></u>				
14		1		(]	/				E	N								
			9:20						F	N								
			3:25	(C .									
19	1550	3:30	4:00	-11					E	N								
20	7750	4:05	4.35	(1					E	Ν								
23	1675	4:40	5:16	(1					E	N			······································					
27	1175	2:12	5:45	(E	N								
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1 See bat	forearm o	diagram	on reverse	of page.		h									·			

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

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	oject No: Date: nd Time:	1609610	nalg	dipt 8	Project	Name:_/ sonnel:	Adelaide W Dan V	/ind Fo),lar						G. COVER	VEG. I ≤ 15cm tall		VISIBILITY Class 1 (Easy	
SIGH/E	na nme.				<u> </u>	∞^{-}	$\overline{\mathbf{A}}$		~	DECOM	POSITION CODES2:				≤ 15cm tal		Class 2 (Mod	
	Weather	26	=1	8km, S	w /	8	0		0	Fresh	Moderate	Complete			≤ 25% > 30		Class 3 (Diffic	
C	onditions:"	TEMP (°C	'	WIND eed/direct		DUD	PPT	P	'PT (last 24-hi	s) Early	Advanced	Scavenged	Little/no	bare ground	≥ 25% > 30	ocm tall (Class 4 (Very	difficult)
Turking		Chand					Bat		UTM Coor	dinates	Deserves	Feb House	In terms of	Distance	Direction	1	Vielle litte	
Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Forearm ¹ (mm)	Zone	Easting	Northing	Decomposition Code ²	Est. Hours Since Death	Injury ³ Sustained	from Turbine (m)	from Turbine	Substrate	Visibility Class ⁴	Photo #
7	1125	11.05	11:35	Unin					E	N								
12	6920	1140	10:10	11					E	Ν								
14	825	17:15	12:45						E	N			····					
20	7650	12:50	1:20	11					E	Ν								
27	1550	125	1:85						E	Ν								
22	900	2:00	2:30	11					E	N								
17	3575	2:39	3:05	//					E	Ν								
19	1550	3:10	3:40	11					E	Ν								
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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

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3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

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	oject No: Date: End Time: Weather Conditions: Area (m ²) 1256 1125 7/00 5300 1300 3300 1300 3500 1150 6800 1100 2750	Date: $\gamma M M$ End Time: $12!3$ Weather 17 Conditions: TEMP (°C Area Start Time 1250 $12:351250$ $12:351250$ $1:455300$ $3:201300$ $2:553500$ $3:301150$ $4:056800$ $4:461100$ $5:152750$ $5:50at forearm diagram$	oject No: 160961067 Date: \underline{MUMU}_{a} (End Time: $\underline{12.130 \text{ a.m.}}$ Weather $\underline{17}$ $\underline{1/1}$ Conditions: TEMP (°C) P Area Start Time End Time $\underline{1256}$ $\underline{2.35}$ $\underline{1:05}$ $\underline{1125}$ $\underline{1:10}$ $\underline{1:40}$ $\underline{7100}$ $\underline{1:45}$ $\underline{2:15}$ $\underline{5300}$ $\underline{2:50}$ $\underline{2:50}$ $\underline{1300}$ $\underline{2:55}$ $\underline{3:25}$ $\underline{3500}$ $\underline{3:70}$ $\underline{4:00}$ $\underline{1150}$ $\underline{4:05}$ $\underline{4:35}$ $\underline{6800}$ $\underline{4:46}$ $\underline{5:10}$ $\underline{1100}$ $\underline{5:5}$ $\underline{5:45}$ $\underline{2150}$ $\underline{5:50}$ $\underline{6:26}$ $\underline{550}$ $\underline{6:26}$	Oject No: 160961067 Date:	oject No: 160961067 Project I Date: <u>MUMUA</u> CHA 26/2016 Pers End Time: <u>12:30 am / 6:15 pm</u> Weather 17 <u>1/Km / SW</u> 7 Conditions: TEMP (°C) WIND CLC speed/direction PArea Start End Time Duration Species 1256 2:35 1:05 30 min 1256 2:35 1:05 30 min 1260 2:55 3:25 11 1300 2:55 3:25 11 1300 2:55 3:25 11 1300 2:55 3:25 11 150 4:05 4:35 11 150 4:05 4:35 11 1100 5:15 5:45 11 1100	Stantec Obse oject No: 160961067 Project Name: / Date: WWWW Out # 25/26/6 Personnel: End Time: 12:30 am / 5:15 pm Weather 17 1/km / SW 72 Conditions: TEMP (°C) WIND CLOUD speed/direction speed/direction Sex (m2) Time End Time Duration Species 1/250 D:35 1:05 30 mm (m/f/u) 1/251 1:0 1:40 11 (m/f/u) 1/250 D:35 1:05 30 mm Sex 7/00 1:45 D:15 30 mm Sex 1/300 D:35 D:25 11 Sex 1/300 D:35 D:25 11 Sex 1/300 D:35 D:45 11 Sex 1/300 D:55 D:45 11 Sex 1/300 D:55 D:45 11 Sex 1/300	Stantec Observation oject No: 160961067 Project Name: Adelaide W Date: MUMMa (114 26)2616 Personnel: Wather 17 1/KM / SW 72 Weather 17 1/KM / SW 72 Stant End Time Duration Species Sex Stant End Time Duration Species Sex Bat (m?) 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С	onditions:	TEMP (°		WIND eed/direct	ion	DUD	PPT	F	PPT (last 24-hrs	s) Early	Advanced	Scavenged	d Little/no	bare ground	≥ 25% > 30	cm tall (Class 4 (Very	difficult)
Turbine		Start	End Time	Duration	Species	Sex	Bat Forearm ¹		UTM Coord	linates	Decomposition	Est. Hours	Injury ³	Distance from	Direction from	Substrate	Visibility	Photo #
No.	(m²)	Time				(m/f/u)	(mm)	Zone	Easting	Northing	Code ²	Since Death	Sustained	Turbine (m)			Class ⁴	
7	1430	9:So	10:20	30min	/				E	N								
6	975	10:25	10:55	/1					E	N								
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1 See ba 3 INJURY	t forearm TYPES: No	diagram ne Visible	on reverse / Broken	of page. Limb / Bro	ken Neck / Bro	ken Wing	/ Cut in Ho		ecapitated /	Head Injury /	Severed Wing /	Wound to Abo	domen					
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0	Stant	tec					tality Su ervation	-										
Pro	ject No:			the	Project	Name: /		18/	orm	_			97 1/5	G. COVER	VEG. H	FIGUT	VISIBILITY	CLASSI
Chaud / Fa	Date:	100	nly C	van	2, 2010 Pers	sonnel:	eme	20							≤ 15cm tall		Class 1 (Easy	
Start/Er	na iime:	10.00	pm /	5:15pm		-		<u>.</u>			OSITION CODES2:				≤ 15cm tall		Class 2 (Mod	
	Weather	60	10	Kin, 1	Nel 2	2	0.2	(12	Fresh	Moderate	Complete			≤ 25% > 30		Class 3 (Diffie	
Co	onditions:~	TEMP (°C	,	WIND eed/direct	CLC	DUD	PPT	f	PPT (last 24-hrs	s) Early	Advanced	Scavenge		bare ground			Class 4 (Very	
lurbine	Area	Start				Sex	Bat			linates	Decomposition	Est. Hours	Injury ³	Distance	Direction		Visibility	
No.	(m²)	Time	End Time	Duration	Species	(m/f/u)	Forearm ¹ (mm)	Zone	Easting	Northing	Code ²	Since Death		from Turbine (m)	from Turbine	Substrate	Class ⁴	Photo #
6	940	12:00	12:30	30 nin					E	N						:		
7	2375	12:35	1:05					-	E	N								
1	7325	1:10	1:40	/	Silverhaur	M	42mm	hT	E 0449163	N 4763617	Frech	Zthr	N/A	Ðm	SE	Grower	11	
20	7,00	145	9.1S	/	Turkey(Tup) Vulture	\sum	\mathbf{X}		E 0440203	N		Zweek	Cutinhalf	Glm	SW	Gas	2	
57	336	9:20	2:50	1	Incidental	2			E	2- 4765 178								
22	1706	Z 93	3:25	1					E	N								
19	1475	3:30	4:00	d					E	N								
17	288	4:05	4:35	1	/				E	Ν								
14	950	4:40	5:10	1					E	N								
12	_	Fa	mer	(M	alis	\mathcal{F}	ertil	zen	E	N								
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See bat	forearm TYPES: Nor	diagram ne Visible	on reverse / Broken	of page. Limb / Bro	iken Neck / Bro	iken Wing	y / Cut in Ho	alf / D	ecapitated /	Head Injury	severed Wing /	Wound to Abo	domen					
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Start/E	oject No: Date: Ind Time: Weather Conditions:	11	10 () () () () () () () () () () () () ()	WIND eed/direct	S	:onnel:	Adelaide V Dam () PPT		grm Gru PPT (last 24-hr	Fresh	2051TION CODES2: Moderate Advanced	Complete	≥ 90% bo ≥ 25% bo ≤ 25% bo	re ground	VEG. H ≤ 15cm tall ≤ 15cm tall ≤ 25% > 30 ≥ 25% > 30	C C Icm tall	VISIBILITY (Class 1 (Easy Class 2 (Mod Class 3 (Diffic Class 4 (Very) lerate) cult)
Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm ¹ (mm)	Zone	UTM Coord Easting	linates Northing	Decomposition Code ²	Est. Hours Since Death	Injury ³ Sustained	Distance from Turbine (m)	Direction from Turbine	Substrate	Visibility Class ⁴	Photo #
7	2/00	1040	11:15	30mh					E	N						4		
6	825	11:00	11.50	(1					E	N		At				D,		
[[6925	11:55	12:25	30min	Silverhour	р	Bann	177	E 0449145	4763613	Fach	Har		Gm	SW	Stope	1	
12	7375	12:30	1:00	11					E	N								
14	1075	1:05	1:35	//					E	N								
17	400	1:40	D:10	//					E	N								
19	1192	9:15	2:45	11					E	N		- 11				n	-	
20	7658	J:X	3:20	30 min	Sillehair	F	39m	17	e0440257	476228	Fash	athr	/	Im	S	Horenver	1	
23	1875	3:52	3:55	11					E	N								
27	380	4,00	4.30	11					E	N								
				1					E	N								
									E	N								
3 INJURY	TYPES: No	alagram ne Visible	on reverse / Broken	or page. Limb / Brc	oken Neck / Bro	ken Wing) / Cut in Ho	nif / D	ecapitated i	Head Injury	Severed Wing /	Wound to Abc	lomen					
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	oject No: Date:	1	067.	teh /			Adelaide V						% VE	G. COVER	VEG. I	HEIGHT	VISIBILITY	
Start/E	nd Time:	11:20	for 1	8.10	m	_		m E		—					≤ 15cm tal		Class 1 (Easy	
	Weather	17	14k	m , S	\mathbf{i}	5	\cap		G	DECOM Fresh	POSITION CODES ² : Moderate	Complete			≤ 15cm tal ≤ 25% > 30		Class 2 (Mod Class 3 (Diffi	
С	onditions:	TEMP (%	$\frac{1}{C}$	WIND			PPT	 F	PPT (last 24-h		Advanced			bare ground			Class 4 (Very	
		·		eed/direct										3	1	[-		, annean)
Turbine		Start	End Time	Duration	Species	Sex	Bat Forearm ¹		UTM Cool	T	Decomposition		Injury ³	Distance from	Direction from	Substrate	Visibility	Photo #
No.	(m²)	Time		Doralion	species	(m/f/u)	(mm)	Zone	Easting	Northing	Code ²	Since Death	Sustained	Turbine (m		300311016	Class ⁴	Photo #
7	2275	11:20	11.50	30min					E	N								
6	1075	11.55	12:29	11					E	N								
11	7500	12:30	1:00	/1					E	N			*					
27	4125	110	1:40	ſI	/				E	N	-							
22	1203	1:45	2:15	(E	N					-	1		
26	6980	2:20	9.56	[[-			E	N								
12	7/00	2.SS	3:25	(1					E	N								
14		3:30		1					E	N								-
17		4:05	4:35	11	/				E	N								
	100				/	-	an an an an an an		E	N								
19	01)	4:10	5:16	11					E	N								
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1 See bo 3 INJURY	t forearm TYPES: Noi	diagram ne Visible	on reverse / Broken	of page. Limb / Bro		ken Wing	/ Cut in Ho	afto	ecapitated	/ Head Injuic	Severed Wing /	Wound to Abc	lomen		1			/
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Pro	ject No: Date:			OJef	Project	Name: /	Adelaide V Dan Di	Vind F	arm	-			% VE	G. COVER	VEG. I	IEIGHT	VISIBILITY	CLASS4
Start/E	nd Time:	11:1	S. T	5:00									≥ 90% bo	ire ground	≤ 15cm tal	C	Class 1 (Easy)
		11			11.1 3	`	0	"Su	0	DECOM	POSITION CODES ² :		≥ 25% bc	ire ground	≤ 15cm tal	C	lass 2 (Mod	lerate)
C	Weather	- []		m / 1	IW 20	<u>+</u>	0	•	<u>9</u>	Fresh	Moderate	Complete	≤ 25% bc	ire ground	≤ 25% > 30	icm tall (lass 3 (Diffic	cult)
C	onomons.	TEMP (°		WIND eed/direct		DUD	PPT	F	PPT (last 24-hr.	s) Early	Advanced	Scavenged	Little/no	bare ground	≥ 25% > 30	cm tall C	Class 4 (Very	difficult)
Turbine	Area	Start	End Time	Duration	Species	Sex	Bat Forearm ¹		UTM Coord	linates	Decomposition	Est. Hours	Injury ³	Distance from	Direction	Substrate	Visibility	Photo #
No.	(m²)	Time		Doralion	opecies	(m/f/u)	(mm)	Zone	Easting	Northing	Code ²	Since Death	Sustained	Turbine (m)		Jobandie	Class ⁴	111010 1
7	380	11:15	11:45	20 prin					E	Ν								
6	100	11:50	12:20	(/	BildTester	n/a	NIA	17	e 451 99	N 4762 542	TEST C.	ARCA	SS	18	SE	gravel	١	/
//	2162	10:25	12:55	[]					E	Ν								
20	7075	1:00	1:20	/(E	Ν								
22	200	1:35	2:05	1/	/				E	N								
27	5840	2:16	2:40	//	/				E	N								
12	1300	2:45	3:15	Ņ					E	N								
14	1180	3:20	3:50	(E	N								
17	3750	3:55	4:25	(1					E	N				ι.				
19	1740	4:30	5.00	()					E	N								
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I See ha	forearm	diagram	on reverse	of name								Contraction and the second	Country of the state of the	NAMES OF A DESCRIPTION OF A	55 A.25 - 5 - 6 - 6 - 6 - 6 - 6 - 6 - 6 - 6 -	Ne CANARA DE CARA RECEIVE	an consideration allows	AND STREET STREET STREET

3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Half / Decapitated / Head Injury / Severed Wing / Wound to Abdomen

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	Stant		N7		Oreinet	Obse	tality Su ervation	For	n	_								
PIO	ject No: Date:		when	Ontal		onnel:	Adelaide V		A A	_			% VE	G. COVER	VEG	HEIGHT	VISIBILITY	CLASSA
Start/Er	nd Time:		30ml	840			Oo .								≤ 15cm ta		Class 1 (Eas)	
			10	1 0	2, 2	<u>с</u>	6			DECOM	POSITION CODES2:			re ground	≤ 15cm ta		Class 2 (Mod	
C	Weather	22	<u> </u>	KMIZ	<u> </u>	2	0	4	2	Fresh	Moderate	Complete	≤ 25% bo	re ground	≤ 25% > 30)cm tall	Class 3 (Diffi	cult)
0	onditions:	TEMP (°C		WIND eed/direct	CLC	DUD	PPT	F	PPT (last 24-h	rs) Early	Advanced	Scavenged	Little/no	bare ground	≥ 25% > 30)cm tall	Class 4 (Ver)	/ difficult)
fu what is a	A	Chaud			1		Bat	1	UTM Cool	dinates				Distance	Direction			1
lurbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Forearm ¹ (mm)	Zone	1	Northing	Decomposition Code ²		Injury ³ Sustained	from Turbine (m	from	Substrate	Visibility Class ⁴	Photo #
26	7800	1:23	1:60	30pin		-			E	Ν								
29	7925	1:05	1:35	11					E	N								
57	7306	1:40	2:16	//					E	N								
19	1740	2:15	2:45	. []					E	N								
17	3300	2:50	3.20	/			()	0	E	N								
14	4175	3.25	3:5	1		Bud to	ster formed		E	N			<u>مەرىرىمىمىلىرىمىمىمىرە مەرىمىمىرە مەرىمىمىمىمىمىمىمىمىمىمىمىمىمىمىمىمىمىمى</u>					
12	6875	4.00	4:30	[]					E	N								
11	7680	4:35	5.05	(/				E	N								
7	4950	5.10	5:40	(/	l			E	N								
6	1325	545	6:15	(Bart Sont) Ma	N/A	17	E 447 166	N 4764 852	TESTE	RCAR	CASS	2	W	gravel	l	1
									E	N								
									E	N				,		-		
See bat INJURY 1	forearm o TYPES: Nor	diagram ne Visible	on reverse / Broken I	of page. Limb / Bro		ken Wing	I / Cut in Ho	alf / D	ecapitated		/ Severed Wing /	Wound to Abd	lomen					
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Start/E	Dject No: Date: nd Time: Weather onditions:	0de 11:15	1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2		TE CLC		O.8CM PPT		Den D. Scom PPT (last 24-hr	Fresh	POSITION CODES2: Moderate Advanced	Complete	≥ 90% bo ≥ 25% bo ≤ 25% bo	re ground	≤ 15cm tal ≤ 15cm tal ≤ 25% > 30) Cm tall (VISIBILITY Class 1 (Easy Class 2 (Moo Class 3 (Diffic Class 4 (Very	/) derate) cult)
Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm ¹ (mm)	Zone	UTM Coord Easting	Jinates Northing	Decomposition Code ²	Est. Hours Since Death	Injury ³ Sustained	Distance from Turbine (m)	from	Substrate	Visibility Class ⁴	Photo #
27	7650	11:15	11:45	Hp.p			(1+11+)		E	N								
29	7950	11:50	12:20		Bot Doto	n/a	N/a	17	E 438 325	N 4763 197	TESTE	RCAR	CASS	20	SE	Dit	l	/
20.	7775	695	12:55	11					E	N						-		
19	1875	1:00	1:30	1	Bat tester	NIA	N/10	17	E 442 951	N 4764 968	TESTE	R CAG	2(ASS	0	N	(erren 1	l	/
17	3306	1:35	20:6	(1					E	N								
14	4475	2:10	2:40	/1					E	Ν								
la	6425	2:45	3:15	[]					E	N			5 6					
/	790	3:20	3:50	(E	Ν								
7	5200	3.08	4:25	11					E	Ν								
6	1375	4:20	Sich	11	/				E	N								
									E	Ν					-			
									E	N			· · · · · · · · · · · · · · · · · · ·					
1 See bo 3 INJURY	t forearm TYPES: Nor	diagram ne Visible	on reverse / Broken	of page. Limb / Bro PAGE		ken Wing	/ Cut in Ho	31F / D 7	ecapitated /	/ Head Injury /	' Severed Wing /	Wound to Abo Quality Co		0	This for	m is comp		egible D
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	ect No: Date:	1140	mly (tel		Name: /	Adelaide W	Vind Ed	-	_			% VE	G. COVER	VEG. ł		VISIBILITY	
Start/Er	id Time:	10:1	Sam 1	41.06 pm	<u>^/</u>	_									≤ 15cm tall		Class 1 (Easy	
	Weather	CI	23/	tin il	14 41	·	0.3cm	. (0.3cm	Fresh	POSITION CODES ² : Moderate	Complete			≤ 15cm tall ≤ 25% > 30		Class 2 (Mod Class 3 (Diffie	
Co	onditions:	TEMP (°C		WIND			PPT		PT (last 24-hr		Advanced			bare ground			class 4 (Very	
				eed/direct	ion													
	-						Bat	I	UTM Coord	lingtos	1	11		Distance	Direction		Pression and	1
Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Forearm ¹ (mm)	Zone	1	Northing	- Decomposition Code ²	Est. Hours Since Death	Injury ³ Sustained	-	from	Substrate	Visibility Class ⁴	Photo #
27	7550	10:5	10,45	30 pin					E	N								
22	7925	10:20	11:20	11					E	N								
26	1656	11:25	11:55	(1	/				E	N								
19	1725	120	12:30	(1					E	N								
17	3756	12:35	1:05	(/				E	N								
14	3865	1:16	1:46	(E	N								
12	1/06	1:45	2:15	[]					E	N								
//	7735	C:C	2:50	11					E	N								
7	5160	5:22	3:25	11					E	N								
6	1846	3:30	4:00	11					E	N								
									E	N								
									E	N								
1 See bat 3 INJURY T	forearm YPES: Nor	diagram ne Visible	on reverse / Broken I	of page. Limb / Bro	ken Neck / Bro	ken Wing	/ Cut in Ho	alf / De	ecapitated /	Head Injury	/ Severed Wing /	Wound to Abd	omen					

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	oject No: Date: nd Time:	21	1067	Soteh 4:10ar	2 Aler	Name:_/ sonnel:	Adelaide V	Vinple	h					G. COVER	VEG. H ≤ 15cm tall		VISIBILITY Class 1 (Easy	
Junit	, 11 II AI -	it	m		TE 70	y -	12-		1.20~	DECOMI	POSITION CODES2:				≤ 15cm tall		Class 2 (Moc	
с	Weather onditions:*	TELLE	101	m, 1			1.200			Fresh	Moderate	Complete			≤ 25% > 30		Class 3 (Diffie	
		TEMP (°		WIND eed/direct	CLC	000	РРТ		PPT (last 24-hr:	s) Early	Advanced	Scavenged	d Little/no	bare ground	≥ 25% > 30	cm fall [C	Class 4 (Very	difficult)
Turbine	Area	Start	En el Timo e	Duration	Smealer	Sex	Bat		UTM Coord	linates	Decomposition	Est. Hours	injury ³		Direction		Visibility	Dhala #
No.	(m²)	Time	ena iime	Duration	Species	(m/f/u)	Forearm ¹ (mm)	Zone	Easting	Northing	Code ²	Since Death		from Turbine (m)	from Turbine	Substrate	Class ⁴	Photo #
7	6700	11:00	11:30	30min					E	N								
6	2175	1:35	12:05	11					E	Ν								
][7358	2:10	12:40	N					E	N				-		· · · · · · · · · · · · · · · · · · ·		
12	7675	12:45	1:15	11					E	N								
14	3800	1:20	liso	,1	-				E	N								
17	4/86	1.55		' (/				E	N								
19	1965	2.30		d					E	N								
20	_(Mar	1-	nies					E	N								
22	80/5	3.115		30min	Bet Hoary	/	46pm		E CH38323	4763205	Folding ent	72hrt	/	15m	1/	RETTOD	1	1
27	7B25	3.46	4:16	11				. ,	E	N	eranova	1011		t yr		United		
61		7.(0							E	N			<u></u>		· · · · ·		-	
									E	N								
1 See ba 3 INJURY	t forearm TYPES: Noi	diagram ne Visible	on reverse / Broken	of page. Limb / Brc		ken Wing	/ Cut in Ho	alf / D	ecapitated /	Head Injury /	/ Severed Wing /	Wound to Abc	lomen					
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Start/E	oject No: Date: nd Time: Weather onditions:	May q:4	() 13km	2016 1:40p	<u> </u>		Adelqide V Nash C	iolus)		Fresh	POSITION CODES ² : Moderate Advanced	Complete	≥ 90% bo ≥ 25% bo ≤ 25% bo	re ground	VEG. F ≤ 15cm tall ≤ 15cm tall ≤ 25% > 30 > 25% > 30	cm tall	VISIBILITY Class 1 (Easy Class 2 (Moc Class 3 (Diffic Class 4 (Very	r) derate) cult)
urbine No.	7.18	Start Time		eed/directi	and the second second	Sex (m/f/u)	Bat Forearm ¹ (mm)	Zone	UTM Cool		Decomposition		injury ³	Distance from Turbine (m)	Direction from		Visibility	Photo
5	7854	9:55	10:10	15mins				1	E _{MEPLM}	N				<i>t.</i>				
8			10:30				S.	6.7	E	N								
9	7854	10:35	10:50	15mins					E	N								
13	7854	11:00	11:20	20 mins	/	$E_0(100)$	122		E	N								
15	3000	11:25	11:40	15mins					E	N				1.				
18	7854	11:55	12:10	15mins			-		E	N			-					
21	7854	12:25	12:40	15mins					E	N								
26	7854	12:50	1:05	15m.n	/		1.		E	N								
						- 			E	N				dan dan				1000
				34.14		4		1	E	N								
							- 11-		E	N			and and an					
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NJURY '		ne Visible	on reverse d / Broken L	imb / Brok	ken Neck / Bro	ken Wing	/ Cut in Ho	ulf / De	ecapitated	/ Head Injury ,	/ Severed Wing /	Wound to Abc		Idoptor (a) Actai	neure peur	m is comp	Logo L	W.elo

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Start/E	nd Time:	10:50	067 e <u>2200</u>)om /)) () () ())	:30pm		connel:	Adelaide V Nash PPT	Colvill		Fresh	MPOSITION CODES ² Moderate Advanced	Complete	≥ 90% bo ≥ 25% bo ≤ 25% bo	G. COVER are ground are ground are ground bare ground	≤ 15cm tall ≤ 15cm tall ≤ 25% > 30	cm tall	VISIBILITY Class 1 (Eas) Class 2 (Moo Class 3 (Diffi Class 4 (Very	/) derate) cult)
Turbine No.	Area (m²)	Start Time	spe	eed/directi	on Species	Sex (m/f/u)	Bat Forearm' (mm)	Zone	UTM Coord Easting	dinates Northing	Decomposition Code ²	Est. Hours Since Death	Injury ³ Sustained	Distance from Turbine (m	from	Substrate	Visibility Class ⁴	Photo
5	7854	11:00	11:15	15m;10	/			E	aren Maran	N								
8	6500	11:20		20 mins		S.J.		E		N						: 	· · · · · · · · · · · · · · · · · · ·	
9	7854	11:45	12:00	15min		1		E		N								
1)	7854	12:05	12:25	10 mins	00000/00	10000	544) 1944	E		N		Ben st	in the second					
18	7854	12:30	12:50	20 m. N	/			E		N								
21	7854	1:00	1:20	20mins	/			E	- 1	N								
26	TUR	BIN	VEC	ONIC	TRUCT	TON		ε.		N								
15	ma	nten	1000		11.1001			E		N								
	1 1021		M100	24				E		Ν								
	- ' ii							: : : : : : : : : : : : : : : : : : :		N								
								E		N							1	
						Fr 1		E		N							· · · · · · · · · · · · · · · · · · ·	
I See bat 3 INJURY 1	YPES: Nor	e Visible	on reverse o / Broken L	pf page. imb / Brok PAGE_	Service	ken Wing	/ Cut in Hc	ulf / Dec	capitated /	ı ' Head Injury	/ Severed Wing /		ente toto d'hidro	n piese () More		anpagan		54010

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FORM 019 / REV: 2016-04-20

	bject No: Date: nd Time:	lials	19Hn	2:00pm	Per	Name: sonnel:	Adelaide V	Vind F	arm le	_			≥ 90% bc		VEG. H ≤ 15cm tall		VISIBILITY Class 1 (Easy	1)
	Weather onditions:	-		1/h/ N	IW FER	(15%)	0		/	Fresh	POSITION CODES ² : Moderate	Complete			≤ 15cm tall ≤ 25% > 30		Class 2 (Mod Class 3 (Diffic	
С	onditions:	TEMP (°		WIND eed/direction	CLO	วับDั ′ ¯	PPT	F	PPT (last 24-t	nrs) Early	Advanced	Scavenged	d Little/no	bare ground	≥ 25% > 30	cm tal <u>l</u>	Class 4 (Very	difficult)
urbine	Area	Start	Come I			Sex	Bat	in.	UTM Coo	rdinates		Est. Hours	injury ³	Distance			Visibility	Dhada
No.	(m²)	Time	End Time		Species	(m/f/u)	Forearm ¹ (mm)	Zone	Easting	Northing	Code ²	Since Death	Sustained	from Turbine (m)	from Turbine	Substrate	Class ⁴	Photo
5	7854	11:20	11:35	Brin	/				E DAE 9707	N								
8	4000	11:40	11:50	10 min	/	250	- 19	W.	E	N								
9	1		The start of	10 min			N. S.		E	N						4		
13			11:25		/	truitel		1	E	N								
15	300	12:30	12:45	15min.	/				E	Ν								
18	7854	(2:50		15min	/		S.E.A.		E	N	4					y - H		
21	7854	1:10	1:05	15min	/			en e	E	N				-				
26	7854	1:30	1:45	15min	/				E	N								
						- némi		e) e	E	N			×			9 		
							EB(3		E	N								
									E	N								
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jee bat NJURY '	forearm o TYPES: Nor	ne Visible	on reverse o / Broken L	imb / Brok	en Neck / Bro		/ Cut in Ho	alf / D	ecapitated	/ Head Injury ,	/ Severed Wing /	Wound to Abc	lomen	in Ministry	11-51-375	ne Mar	t' (clera	17050.0

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	Date:	1609610 Augu	1st 24	th 2016	Pers		Adelaide M							G. COVER	VEG. I	IEIGHT	VISIBILITY	CLASS4
tart/Er	nd Time:	10:4	Dami	4:050-	<u>^</u>	- A.									≤ 15cm tall		Class 1 (Easy	
	Weather	0700	artm		IFA	NON	A		-		POSITION CODES ² :	0			≤ 15cm tall		Class 2 (Moc	
Co	weather anditions:		4	h/N	W Fair	(12/0)	PPT		DT (Inst 0.4 h	Fresh	Moderate	Complete			≤ 25% > 30		Class 3 (Diffic	Collins of the local division of the local d
		TEMP (°		WIND eed/direction		00	C.		PT (last 24-h	rs) Early	Advanced	Scavenged		bare ground	2 25% > 50		Class 4 (Very	ameon
ine i Ng		I	The set		1		Bat		UTM Coor	dinates	1			Distance	Direction			
No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Foregrm ¹	Zone	Easting	Northing	Decomposition Code ²	Est. Hours Since Death	Injury ³ Sustained	from Turbine (m)	from	Substrate	Visibility Class ⁴	Photo
5	7854	10:50	11:20	30mo	/				E _{lectu} Versied	N								
8	11	11:25	11:55	30mm	/		-cr		E	N						:		
9	1184	12.00	10:20	Maria	/		Second Color		E	N								
3		12:35	1:05	No.0		0.49545			E	N								
15		1:10	1.110	VI					E	N						201		
8	11	1:45	215	JUNIO					E.	N								
0	11	2711	2.10	DUPTIN					E	N								
4	11	2:40	1.50	Dmin	\square													-
26	11	2:55	3:25	30 min	/		e Charles			N								
									E	N								
				111				E		N			R					
								E		N								
								E		N							10 0 000000000000000000000000000000000	
e bat JURY T	forearm YPES: Nor	diagram o ne Visible	on reverse o / Broken L	of page. .imb / Brok	en Neck / Bro	ken Wing	/ Cut in Ho	alf / De	capitated	/ Head Injury	/ Severed Wing /	Wound to Abd	omen	-				

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0	Stan	tec				Obse	tality Su ervation	Form	n	Ş	SAR Tr	icil						
Start/E	Diject No: Date: nd Time: Weather onditions:	11:00	<u>Wody</u>)an / - <u>18</u> c)	6200 6200 Km / WIND weed/direct		Name: A sonnel: M 40 DUD	Celaide V Den C O,R(1 PPT	m	orm SAR 0.9 PPT (last 24-hr	DECOM	POSITION CODES2: Moderate Advanced	Complete	≥ 90% bo ≥ 25% bo ≤ 25% bo	re ground	VEG. F ≤ 15cm tall ≤ 15cm tall ≤ 25% > 30 ≥ 25% > 30	cm tall C	VISIBILITY C Class 1 (Easy) Class 2 (Mod Class 3 (Diffic Class 4 (Very) lerate) cuit)
Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm ¹ (mm)	Zone	UTM Coord Easting	dinates Northing	Decomposition Code ²	Est. Hours Since Death	Injury ³ Sustained	Distance from Turbine (m)	from	Substrate	Visibility Class4	Photo #
5	7906	11.00	11:45	45min					E	N								
8	7980	11:50	12:45	SSmin					E	Ν								
9	8175	12:50	1:30	Homin					E	Ν								
13	8050	1:35	2:20	45 nin	+				E	N								
		L	epti	wing	Wan	min	ç /,		E	N								
15	7875			35min					E	N								
18	7975	4:20	5:00	Hunin					E	N								
21	8030	5.05	5:35	30mh	Oleanhain	/	Hamm	IT	e 0631915	N 4750609	Convolte	Weekt	/	41m	E	Gruss	2	/
26	8240	5:40	6:20	Homin	/				E	N								
		/					, ,		E	N								
	1									N								
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3 INJURY	TYPES: Noi	alagram ne Visible	on reverse / Broken	Limb / Bro	oken Neck / Bro	oken Wing	/ Cut in H	alf / D	ecapitated	/ Head Injury	/ Severed Wing /	Wound to Abc	domen					
no name:	mortality-su	vev-obsen	vation 16098		OF ame & Initial:_	Dan	Dilario) field n	otes author	1	F	Quality Co Print Name & I	/		wigan	The second secon	Ze	>

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		FORM 019 / REV	1:2016-10-31

Stantec			ortality Survision F		S	AR				
Project No: 160961067 Date: <i>WW</i>	Julen 26th /20	roject Name: Personnel:	Adelaide Wi	ad Form SAR	Ta	al		% VEG. COVER	VEG. HEIGHT	VISIBILITY CLASS4
Start/End Time: 12:30	m S. C.Som				11-			≥ 90% bare ground	≤ 15cm tall	Class 1 (Easy)
~	1111 -	GA	21	71	DECOMPO	SITION CODES ² :		≥ 25% bare ground	≤ 15cm tall	Class 2 (Moderate)
Weather 5	MMI E	40	d.lcn	d. 10-	Fresh	Moderate	Complete	≤ 25% bare ground	≤ 25% > 30cm tall	Class 3 (Difficult)
Conditions: TEMP (°C)	WIND speed/direction	CLOUD	PPT	PPT (last 24-hrs)	Early	Advanced	Scavenged	Little/no bare ground	d≥25% > 30cm tall	Class 4 (Very difficult)

Turbine	Area	Start				Sex	Bat		UTM Coord	dinates	Decomposition	Est. Hours	Injury ³	Distance	1		Visibility	
No.	(m ²)	Time	End Time	Duration	Species	(m/f/u)	Forearm ¹ (mm)	Zone	Easting	Northing		Since Death	Custorin a d	from Turbine (m)	from Turbine	Substrate	Class ⁴	Photo #
5	7900	19:20	1:10	HOW					E	N								
8	7986	1:15	145	30hr					E	Ν			-					
9	8175	1.50	2,78	30min					E	Ν								6
				35mh					E	Ν								
15	5090	3:05	3:35	30min					E	Ν								
18	7875	3:40	4:20	40min 35min 40min					E	N								
91	7966	4:25	5.00	35min					E	Ν								
96	2463	Sigs	5:45	Yomis					E	Ν								
									E	Ν							~	
	-								E	Ν								
									E	N								
										Ν								

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

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Mortality Survey Observation Form

Pro Start/E	oject No: Date: nd Time:	1609610	ly Ne	2:30pm	Project Pe		Adelaide V Den		Irm						G. COVER	VEG. I ≤ 15cm tal	ieight	VISIBILITY Class 1 (Easy	
	Weather	16¥ TEMP (℃	1 2:	3 Km S WIND eed/direction	2 CL	QUD	G PPT	PI	G PT (last 24-h	Fresh	n	ION CODES ² : Moderate Advanced	Complete	≤ 25% bo	are ground are ground bare ground		ocm tall	Class 2 (Moo Class 3 (Diffi Class 4 (Ven	icult)
Turbine No.	Area (m²)	Start Time	End Time	Duration (min)	Species	\$ex (m/f/u)	Bat Forearm ¹ (mm)		UTM Coor Easting E	dinates Northir N		omposition Code ²	Est. Hours Since Death	injury³ Sustained	Distance from Turbine (m)	from	Substrat	e Visiblitty Class ⁴	' Photo #
27	7935	10.00	10:20	Zomin					E	N									
22	2912	10:25	10:55	30					E	N		7.0 5							
90	8060	11:00	11:15	15					E	N		100							
19	7750	11:20	11:45	52					E	N									
17	7240	11:50	12:10	20					E	N									
14	7680	12:15	12:45	30					E	N									
12	8140	12:50	1:10	20		31			E	N	- 10								
11	7920	1:15	1:35	20					E	N									
£	8275	1:40	2:00	20				1.3	E	N									
7	7525	2:05	2:30	25			201 ²⁸			N									
			1					-				1							

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

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Mortality Survey Observation Form

Proj Start/En	ect No: Date: d Time:	9:30	100 0/c	2016 2:10p,	P	ersonnel:	Adelaide y	lorio		DECOM	POSITION CODES?:		≥90% bo		VEG. H ≤ 15cm tall ≤ 15cm tall	C	VISIBILITY (Class 1 (Easy) Class 2 (Mode)
Co	Weather nditions: T	14 EMP (°C		Km/ S WIND	C	60 SLOUD	O.len		0.1cm T {last 24-hr	Fresh	Moderate Advanced	Complete Scavenged	≤ 25% bo	ire ground bare ground	≤ 25% > 30	cm tall C	Class 2 (Mod Class 3 (Diffic Class 4 (Very	cult)
Turbine No.	Area (m²)	Start Time	End Time	min)	Species	Sex (m/f/u)	Bat Forearm¹ (mm)		UTM Coord Easting	dinates Northing N	Decomposition Code ²	Est. Hours Since Death	injury ³ Sustained	Distance from Turbine (m)	from	Substrate	Visibility Class ⁴	Photo #
7	7840	9:30	9:50	20				E		N								
6	8165	9:55	10:20	25				E		N								
(1	7535	10:3	10:50	25				E		N								
12	7915	10:55	11:20	25				E		N								
14	8305	11:25	11:55	30				E		N								
17	818	12.01	1 12:20	20				E		N								
19	8140	12:2	5 (2:So	25				E		N								
20	785	12:5	06:) z	25				E		N								
22	775	SC:16	1:50	25				Ε		N								
27	800	2:10	52:10	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

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	oject No: Date: nd Time: Weather onditions:		C)	2016 4ilSpm (m / S WIND eed/directio	Pe	Obse	delaide W Obvi Obvi Opvi PPT		n	Fresh	MPOSITION CODES?: Moderate Advanced	Complete	≥ 90% bo ≥ 25% bo ≤ 25% bo			cm tall	VISIBILITY (Class 1 (Easy) Class 2 (Mod Class 3 (Diffic Class 4 (Very) erate) :ult)
Turbine No.	Area (m²)	Start Time	End Time	min)	Species	Sex (m/f/u)	Bat Forearm' (mm)	Zone	UTM Coor Easting E	dinates Northing N	Decomposition Code ²	Est. Hours Since Death	injury³ Sustained	Distance from Turbine (m)	from	Substrate	Visibility Class ⁴	Photo #
1	7915	12:00	12:20	20					E	N								
6	8075	12:25	12:40	15					E	N								
11	7765	12:4S	1:00	15					E	N	T							
12	814	20:1	26:1	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								
90	7779	2:50	3:15	25					E	N								
32	6765	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

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								SAF	2						
Date End Time	: MUN : 8:301	ic) (1(4:20pm SKm/NW WIND		ersonnel:		Xlu 10	Fresh	Moderate	Complete	≥ 90% bo ≥ 25% bo ≤ 25% bo	are ground are ground are ground	≤ 15cm tall ≤ 15cm tall ≤ 25% > 30cm ta	Class 1 (Class 2 (II Class 3 (Moderate)
e Area (m²)	Start Time	End Time	Duration min	Species	Sex (m/f/u)	Bat Forearm ¹ (mm)			and the second se		Injury³ Sustained	from	from Sub		
780S	8:30	8:55	25				E	N	_						
7875	9:00	9:25	25				E	N							
8/60	9:30	9:45	15				E	N							
8105	9:50	10:05	15				E	N							
7980	10:10	10:25	15				E	N							
7170	10:30	10:45	15	1983			E	N							
7965	10:50	14:05	25				E	N							
7455	11:10	11:35	26				E	N							
803C	11:40	12:00	20				E	N							
7735			25				E	N	130						
7960	12:35	22:61	20				E	N							
	Date Vend Time Conditions Me Area (m ²) 7875 7875 8/60 8/05 7980 7980 7980 7980 7970 7965	Date: MON Find Time: 8:50, Weather 2 Conditions: TEMP (c Area Start Time 7805 8:30 7875 9:00 7875 9:00 8/00 9:30 8/05 9:56 7980 10:10 7770 10:30 7965 10:50 7455 11:10 8030 11:40 7735 12:05	Find Time: $g: 50_{AVA}$ Weather $2_{Conditions: TEMP}$ (°C) 10_{SP} Area Start End Time Tme End Time End Time 780S 8:30 8:SS 787S 9:00 9:255 8/60 9:30 9:45 8/0S 9:56 10:00 7980 10:10 10:25 7970 10:30 10:45 796S 10:50 14:05 74SS 11:10 11:35 8030 11:40 3:40 7735 13:65 13:30	Date: $MOV 227 2016$ Find Time: $g:50_{AVA}$ / $4:20_{PM}$ Weather 2 Conditions: TEMP (°C) / $10_{Km}/NV$ speed/direction Time End Time Duration min 7805 8:30 8:55 25 7875 9:00 9:25 25 7875 9:00 9:25 25 8/60 9:30 9:45 15 8/05 9:56 10:06 15 7980 10:10 10:25 15 7970 10:30 10:45 15 7965 10:56 14:05 25 7455 11:10 11:35 25 8030 11:40 2:00 26 7735 12:00 12:30 25	Date: MON $\partial \partial f \partial dlb$ Perform Vend Time: $g: go_{AVA}$ $4: 20pm$ Weather ∂_{ec} 10 km/ NW ∂_{ec} Conditions: TEMP (°C) 10 km/ NW ∂_{ec} Meather ∂_{ec} 10 km/ NW ∂_{ec} speed/direction speed/direction G MinD Species Min G $780S$ $8:30$ $8:SS$ DS G $787S$ $9:00$ $9:25$ DS G $787S$ $9:00$ $9:25$ DS S $8/60$ $9:56$ $10:0C$ $1S$ S $8/0S$ $9:56$ $10:0C$ $1S$ S 7980 $10:10$ $10:2S$ $1S$ S 7970 $10:30$ $10:4S$ $2S$ S $74SS$ $11:10$ $11:3S$ $2S$ S 8030 $11:40$ $0:40$ 20 G $773S$ $12:0$ $2:30$ $2:5$ G <td>Obse roject No: 160961067 Date: $MON \rightarrow \rightarrow / \rightarrow d/6$ Project Name: . Personnel: Weather \rightarrow Conditions: TEMP (°C) IOKm//WW WIND speed/direction Sex (m/f/u) Weather \rightarrow Could conditions: TEMP (°C) IOKm//WW WIND speed/direction Sex (m/f/u) Project Name: . Personnel: Area (m2) Start Time End Time Duration Species Sex (m/f/u) Project Name: . Personnel: Project Name: . Personnel: Weather \rightarrow Could (min) Species Sex (m/f/u) Project Name: . Personnel: Project Name: . Personnel: Project Name: . Personnel: Project Name: . Project Name: . Project Name: . Project Name: . Project Name: . Project Name: . Project Name: . . Project Sig<td>Observation roject No: 160961067 Date: $MON \rightarrow \rightarrow / \rightarrow d16$ Project Name: Adelaide N Personnel: Don Weather \rightarrow Conditions: TEMP (°C) $10 km/MN$ PC Start End Time Duration Species Sex Mean Minin Species Sex Mathematication 7805 8:30 8:55 \Im S S 7875 9:00 9:25 \Im S S 8/60 9:36 10:05 15 S S 7980 10:10 10:25 15 S S 7980 10:10 10:25 15 S S 7980 10:10 10:25 15 S S 7980 10:56 14:15 25 S S 7455 11:10 11:35 25 S S 7735 12:63 12:30 25 S S </td><td>Date: MOV 247 2016 Personnel: Dn Dllw Vendition: g: \$30,4^n 1 4'.200 M 20 0 0 0 PPT PPT PPT PPT (last 24 weather 2 10km/ NW 20 0 0 0 PPT PPT PPT (last 24 weather 2 10km/ NW 20 0</td><td>Observation Formroject No: 160961067 Date: $MON \rightarrow \rightarrow \rightarrow \rightarrow \rightarrow 016$Project Name: Adelaide Wind Farm Personnel: Don DiffusWeather Conditions: TEMP (°C)10 km/ NU WIND speed/direction\mathcal{DC} CLOUD\mathcal{O} PPT\mathcal{O} PPT (last 24-hrs)<math>DECOLFreshEarlyWeatherConditions: TEMP (°C)10 km/ NUWINDspeed/direction\mathcal{DO} CLOUD\mathcal{O} PPT\mathcal{O} PPT (last 24-hrs)<math>DECOLFreshEarlyMe(m?)StartSpeed/directionEnd Time Duration(MiN)SpeciesSexForearm(m/I/U)EarlyForearm(mm)<math>DECOLPPT (last 24-hrs)<math>DECOLFreshEarlyMe(m?)Start(m?)End Time Duration(MiN)SpeciesSexForearm(m/I/U)DoPPT (last 24-hrs)<math>DECOLFreshEarlyMe(m?)Start(m?)End Time Duration(MiN)SpeciesSexSexForearm(m/I/U)DoPPT (last 24-hrs)<math>DECOLFreshEarlyMe7800Start(PPT)End Time Duration(MiN)SpeciesSexForearm(m/I/U)DoForearm(mm)$DECOL(DoEDECOLPPTMe7800Start(P,25SSSSDDMe7800(0.10(0.25)SSEN7800(0.10)(0.25)(1.5)EN7800(0.10)(0.25)(1.5)EN7800(0.10)(0.10)(1.5)EN78$</math></math></math></math></math></math></td><td>$\begin{array}{c c c c c c c c c c c c c c c c c c c$</td><td>Observation FormProject Nor: 160961067Date: $M(W) \rightarrow \partial$</td><td>Observation Form Project Name: Adelaide Wind Farm Date: MUN J J J J J J Poil Project Name: Adelaide Wind Farm Personnel: Differ Pend Time: g: 50 x A / 4': 20 A A Personnel: Differ Personnel: Differ Personnel: Differ Personnel: Differ 255 bit 255 bit<td>Observation Form Project Name: Adelaide Wind Form Date: MOV 3-1/3/100 Project Name: Adelaide Wind Form Project Name: Dor Project Name: Adelaide Wind Form Project Name: Dor Weather 2 Conditions: 14/304/10 Start IO(km/W) Start IO(km/W) Start IO(km/W) Start Intel® Duration Specid/direction Species Start Imme (m?) 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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

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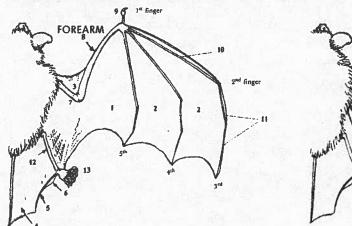
sire: Adelaide Wind Form

DATE: NOV 22, 2016 Mortality Survey Observation Form

No.	Area (m²) 8[80	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm¹ (mm)	zone	UTM Coord Easting E	dinates Northing N	Decomposition Code ²	Est. Hours Since Death	Barak astrona at	Distance from Turbine (m)	from	Substrate	Visibility Class ⁴	Photo #
11	7885	1:30	1:55	35					E	N								
9	7180	2:00	5:92	25					E	N								
8	8165	2:30	J:21	25					E	N								
7	774S	3.00	3.25	25					E	N								
C	8080	3:30	3:55	25					E	N								
5	7975	4:00	4:20						E	N								
							tines tille		E	N								

1 See bat orearm diagram below. 3 INJURY TIPES: 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)



SOLECH Var Ayli de Jong, C.O. 985, L'andback of Canadian Manma's 2 Bats. National Museum of Pioluco Sciences (Canada), Ohawa, Ontaria, 212 pp.

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FOREARM LENGTH

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Start/Er	Date: nd Time: Weather	10	24/5 10mm/ c) (19h	DOIG 1:35pm (m / SW WIND aed/direction		SO SLOUD	Cl.3 PPT	1 c)),3 (last 24-hrs)	DECON Fresh Early	APOSITION CODES ² : Moderate Advanced	Complete	≥ 90% bo ≥ 25% bo ≤ 25% bo	are ground	VEG. H ≤ 15cm tall ≤ 15cm tall ≤ 25% > 30 ≥ 25% > 30	cm tall	VISIBILITY (Class 1 (Easy Class 2 (Mod Class 3 (Diffic Class 4 (Very) lerate) cult)
Turbine No.	Area (m²)	Start Time	End Time	Duration (Min)	Species	Sex (m/f/u)	Bat Forearm ¹¹ (mm)		M Coordi Easting	Northing	Decomposition Code ²	Est. Hours Since Death	Injury³ Sustained	Distance from Turbine (m)	from	Substrate	Visibility Class ⁴	Photo #
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20	7950	10:45	11:16	25				E	٢	4								
19	7540	11:15	11:40	36				E	1	1								
17	7850	145	12:05	20				E	٢		1996) 2							
14	7905	12:10	12:45	25				E	٢									
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	Sec					1.2		E	٨									

1 See bat forearm diagram on reverse of page. 3 INJURY TYPES: None Visible / Broken Limb / Broken Neck / Broken Wing / Cut in Holf / Decapitated / Mead Injury / Severed Wing / Wound to Abdomen

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ADELAIDE WIND POWER PROJECT: YEAR 2 POST-CONSTRUCTION WILDLIFE MONITORING REPORT (2016)

APPENDIX G2 FIELD FORMS (RAPTOR MONITORING PROGRAM)



S.A.R. Reporting **Mortality Survey** Stantec **Observation Form** Project No: 160961067 Project Name: Adelaide Wind Farm Date: May 4th 2016 Personnel: Nath Calille % VEG. COVER **VEG. HEIGHT VISIBILITY CLASS⁴** Start/End Time: 8:45am 1 2:450m ≥ 90% bare ground ≤ 15cm tall Class 1 (Easy) ≥ 25% bare ground ≤ 15cm tall Class 2 (Moderate) **DECOMPOSITION CODES2:** Weather 14⁶ Conditions: TEMP (°C) Clear 22KW/ SE ≤ 25% bare ground ≤ 25% > 30cm tall Class 3 (Difficult) X mn Fresh Moderate Complete WIND CLOUD PPT PPT (last 24-hrs) Little/no bare ground ≥ 25% > 30cm tall Class 4 (Very difficult) Early Advanced Scavenged speed/direction Direction **UTM Coordinates** Distance Bat Turbine Area Start Decomposition Est. Hours Injury³ Visibility Sex **End Time Duration Species** Forearm from from Substrate Photo # Class⁴ Time Code² Sustained No. (m²) (m/f/u)Since Death Zone Easting Northing (mm) Turbine (m) Turbine IN 8 85 9:25 30 min E N 9:30 10:00 Q 11 E N 11:00 11 E N 11:35 5:05 13 11 30min F N 8 30min 12:1(11 İΕ N 5.40 SOM: 11 E N 26 :50 11 E 35m? N R:10 11 F 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 This form is complete 🗹 & legible 🗹 PAGE OF **Quality Control:** GN Nash Print Name & Initial: Anna Print Name & Initial: DUGAAA

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TurbineAreNo.(m²		End Time	e Duration	Species	Sex (m/f/u)	Forearm ¹ (mm)	Zone	Easting	Northing	Decomposition Code ²	Est. Hours Since Death	Injury ³ Sustained	from Turbine (m)	from	Substrate	Visibility Class ⁴	Photo #
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8	11	10:50	11:50	Drins	/				E	N								
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See bat SINJURY T	YPES: Nor	ne Visible	on reverse o / Broken L	imb / Brok		ken Wing	/ Cut in Ho	lf / De	ecapitated ,	l ' Head Injury ,	/ Severed Wing /		ingalinga gilning	(sir 42 - 1.6) [e254]	Lane!	m is compl		

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Start/E		June 10:50	8th, 21 	WIND eed/direction	Per E CLC	sonnel:]	Adelaide V Nash C PPT	dv:ll		Fresh	POSITION CODES ² : Moderate Advanced	Complete	≥ 90% bo ≥ 25% bo ≤ 25% bo	G. COVER are ground are ground are ground bare ground	≤ 15cm tall ≤ 15cm tall ≤ 25% > 30	cm tall	VISIBILITY Class 1 (Easy Class 2 (Moo Class 3 (Diffic Class 4 (Very	r) derate) cult)
Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm ¹	7		1	Decomposition Code ²		Injury ³	Distance from	Direction from	Substrate	Visibility	Photo
5	-		11.15	15mins		(11)1/0)	(mm)	Zone	Easting E	Northing N	Code	Since Death	Sustained	Turbine (m) Turbine		Class ⁴	
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8	1000	11:70	11:30	10 mas		115	en ser	No.										
9	7854	11:35	11:50	15mins		15	d		E	N								
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18				Smins					E	Ν			(4)					
21		12:45		15mins					E	Ν								
76		struc	1 -46					и и Т	E	N								
70	001		-1011						E	N								
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See bat INJURY T	forearm of YPES: Non 255 Ro	diagram a le Visible		imb / Broke	en Neck / Brok	1	A SHOW IN THE	lf / De	ecapitated /	Head Injury /	Severed Wing /	Wound to Abd	lomen 2004/2014-0	trans		Superiore	1000	1.15.0

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FORM 019 / REV- 2016-04-20

	Date:	1609610	(5th	3:15pm	Pers	Name: /	Adelaide V	Vind Fo	2irm				≥90% bc		VEG. I ≤ 15cm tall	N. La L	VISIBILITY Class 1 (Easy	/)
						- 4/21	Maiti	mm	1-2m	DECOM	POSITION CODES ² :	Complete			≤ 15cm tall ≤ 25% > 30		Class 2 (Moc Class 3 (Diffic	
Co	onditions:	TEMP (°C	c) []}Km]	WIND eed/direction	CLC	COST LIC	PPT	P	1=~mr PT (last 24-h	rs) Fresh	Moderate Advanced	Scavenged		bare ground			Class 4 (Very	
urbine	Area	Start	End Time	Duration	Species	Sex	Bat Forearm ¹		UTM Coor		Decomposition	Est. Hours	Injury ³	Distance from	Direction from	Substrate	Visibility	Photo
No.	(m²)	Time			20	(m/f/u)	(mm)	Zone	Easting	Northing	Code ²	Since Death	Sostainea	Turbine (m)	Turbine		Class ⁴	-
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8	11	11:30	12:05	35mins			and and	N. S.	E	N				71.265			3	
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18	11	1:50					Ser de		E.	N						s. Ver pinge	•	
21	11			30000					E	N	151 S							
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Pro	oject No: Date:	160961	067 e22nd	200 1:30pm	Project	Name: /	Adelaide V	Wind Fo	arm \e				% VE	G. COVER	VEG. I	IEIGHT	VISIBILITY	CLASS4
Start/E	nd Time:	10.50	Dam 1	1:30pm	in the second										≤ 15cm tall		Class 1 (Easy	
	Weather	7401	j lakm	4	2	15.01)	1		~		POSITION CODES ² :			and the second sec	≤ 15cm tall		Class 2 (Mod	
С	onditions:	TEMP (WIND		<u>r(5%)</u> DUD	PPT		PT (last 24-h	rs) Early	Moderate Advanced	Complete Scavenged		ire ground bare ground	≤ 25% > 30 > 25% > 30		Class 3 (Diffic Class 4 (Very	
				eed/directi		500				is, Early	Auvanceu	scavenged		bure groona	2 20/8 > 30		21033 4 (Very	ameon
		Chard	Reserved.		1		Bat	10.0	UTM Coor	dinates	Deserverseller	Eat Maxima	و مربقها	Distance	Direction	-		Ι.
vrbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Forearm ¹ (mm)	Zone		Northing	Decomposition Code ²	Est. Hours Since Death	Injury ³ Sustained	from Turbine (m)	from	Substrate	Visibility Class ⁴	Photo
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ant/En	a lime:	082	<u>75 /</u> 70	12:00	<u>,</u>	150			> '	DECOM	POSITION CODES2:			•	≤ 15cm tal		Class 2 (Mod	
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rbine	Area	Start	K.			Sex	Bat		UTM Coord	dinates	Decomposition	Est. Hours	injury ³	Distance	Direction		Visibility	
No.	(m ²)	Time	End Time	Duration	Species	(m/f/u)	Forearm ¹ (mm)	Zone	Easting	Northing			Sustained	from Turbine (m)	from Turbine	Substrate	Class ⁴	Photo
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	Date:	1609610 July	6th 2	016			Nash C							G. COVER	VEG. H		VISIBILITY	
Start/Er	nd Time:	11:2	5ani	Lizop	m					DECOM	POSITION CODES2:				≤ 15cm tall ≤ 15cm tall		Class 1 (Easy Class 2 (Mod	
	Weather	28	16Km	415	5 Fair(15%)	0			Fresh	Moderate	Complete		ire ground	≤ 25% > 30		Class 3 (Diffie	
Co	onditions:	TEMP (°C	C)	WIND eed/direct	CLC	DUD	РРТ	F	PPT (last 24-h	rs) Early	Advanced	Scavenged	Little/no	bare ground	≥ 25% > 30	cm tall	Class 4 (Very	/ difficult
ſurbine	Area	Start	Core and		The second	Say	Bat	1	UTM Coor	dinates	Decomposition	Est. Hours	Injury ³	Distance	Direction		Visibility	
No.	(m ²)	Time	End Time	Duration	Species	Sex (m/f/u)	Forearm ¹ (mm)	Zone	Easting	Northing		Since Death		from Turbine (m)	from Turbine	Substrate	Class ⁴	Photo
5	7854	11:35	11:50	15min	/		Pist State		E _{RCED1} Satisfier	N						11		
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Pro	oject No:	1609610	067		Project	Name: /	Adelaide V	Vind Fo	arm	-	Rapto	of Diff			<u>ner</u> ege			
	Date:	July	13th .	2016	Per	sonnel:	NoshC	11:10	e	<u>-</u>				G. COVER	VEG. H		VISIBILITY	
Start/E	nd Time:	11:3	Dam /	2:350	m										≤ 15cm tall		Class 1 (Eas	
	Weather	201	(Km)		NI EUA	2/100	() ()			Fresh	POSITION CODES ² : Moderate	Complete		are ground	≤ 15cm tall ≤ 25% > 30		Class 2 (Mo Class 3 (Diffi	
С	onditions:	TEMP 0		WIND		ands(20)	PPT	P	PT (last 24-hi	and the second se	Advanced	Scavenged		bare ground			Class 4 (Ver	
i a	P	1		eed/directi				and a second		-,,								
Turbine	Area	Start		1.50	1.1.1.1.1.1.1.1.1	Sex	Bat	182.3	UTM Coord	dinates	Decomposition	Est. Hours	injury ³	Distance	Direction		Visibility	
No.	(m²)	Time	End Time	Duration	Species	(m/f/u)	Forearm ¹ (mm)	Zone	Easting	Northing		Since Death		from Turbine (m)	from Turbine	Substrate	Class ⁴	Photo #
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18	and a second sec		1:35	1.5mm	/					Ν								
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				< _ 1H	10.01		= 105			CONSTRUCTION OF				Coll. On			1211	

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

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	Diject No: Date: Ind Time:	July	, 19 Hn	NICA	Pei		Adelaide M							G. COVER	VEG. H ≤ 15cm tall		VISIBILITY Class 1 (Easy	
		~	am	2:00pm		(IFAD	~		/	DECOM	POSITION CODES ² :			are ground	≤ 15cm tall		Class 2 (Mod	
с	Weather onditions:	TEMP ("	Bri	WIND	VW torr	(15%)_ Oud	 PPT	— <u> </u>	PPT (last 24-hi	Fresh rs) Early	Moderate Advanced	Complete Scavenged		are ground bare ground	≤ 25% > 30 > 25% > 30		Class 3 (Diffic Class 4 (Very	· · · · · · · · · · · · · · · · · · ·
				eed/direct						,	, la	oour on got			<u> </u>			annoon
Turbine	Area	Start	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		122	Sex	Bat	a.	UTM Coor	dinates	Decomposition	Est. Hours	Injury ³		Direction		Visibility	
No.	(m ²)	Time	End Time	Duration	Species	(m/f/u)	Forearm ¹ (mm)	Zone	Easting	Northing	Code ²	Since Death	Sustained	from Turbine (m	from Turbine	Substrate	Class ⁴	Photo
5	7854	11:20	11:35	Brin	/	1	2		E Shereyar	N		111.20						
8	4000	11:40	11:50	DNin					E	Ν								
9	7854	11:55	12:05	10 min	\sim				E	Ν								
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Start/Ei	ject No: Date: nd Time: Weather onditions:	July 10:2	27th Oam 1 15kr	1:35pm "/L/W WIND eed/directiv	Per Fair CL		Adelaide V Nosh (O PPT	Calvil		Fresh	POSITION CODES ² : Moderate Advanced	Complete Scavenged	≥ 90% ba ≥ 25% ba ≤ 25% ba	ire ground	≤ 15cm tal ≤ 15cm tal ≤ 25% > 30	I C Ocm tall C	Class 1 (Easy) Class 2 (Moderate) all Class 3 (Difficult)	
Turbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm ¹ (mm)	Zone	UTM Coord Easting	dinates 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	Junio	/		Ž		E MANG	N								
8	7854	11:05	11:35	Brind	Hoary Bost	NA	51mm	17	E045	N 476	Moderate	48hrs	Unknown	28	E	Shrubber	2	T80721
9	7854	11:40	12:15	35 min			and a second		E	N								
13	7854	12:20	12:50	30000	/	nelasie			E	N			2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2					
15	7854	12:55	1:25	SOMIN	/				E	N	Construction of	dense stationers	CRUCID					
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-						and i			E Transformation	Ν								
7.							4 4 3			Ν								
	1040	-					1.1.1	-		N			-					
See bat	YPES: Nor	e Visible		of page. imb / Brok	en Neck / Bro	bken Wing	/ Cut in Ho	ilf / De	capitated ,	/ Head Injury /	Severed Wing /	Wound to Abc		() = # 1500 ((7)) ~ 11512		2,0140,1	andein	19+010 s

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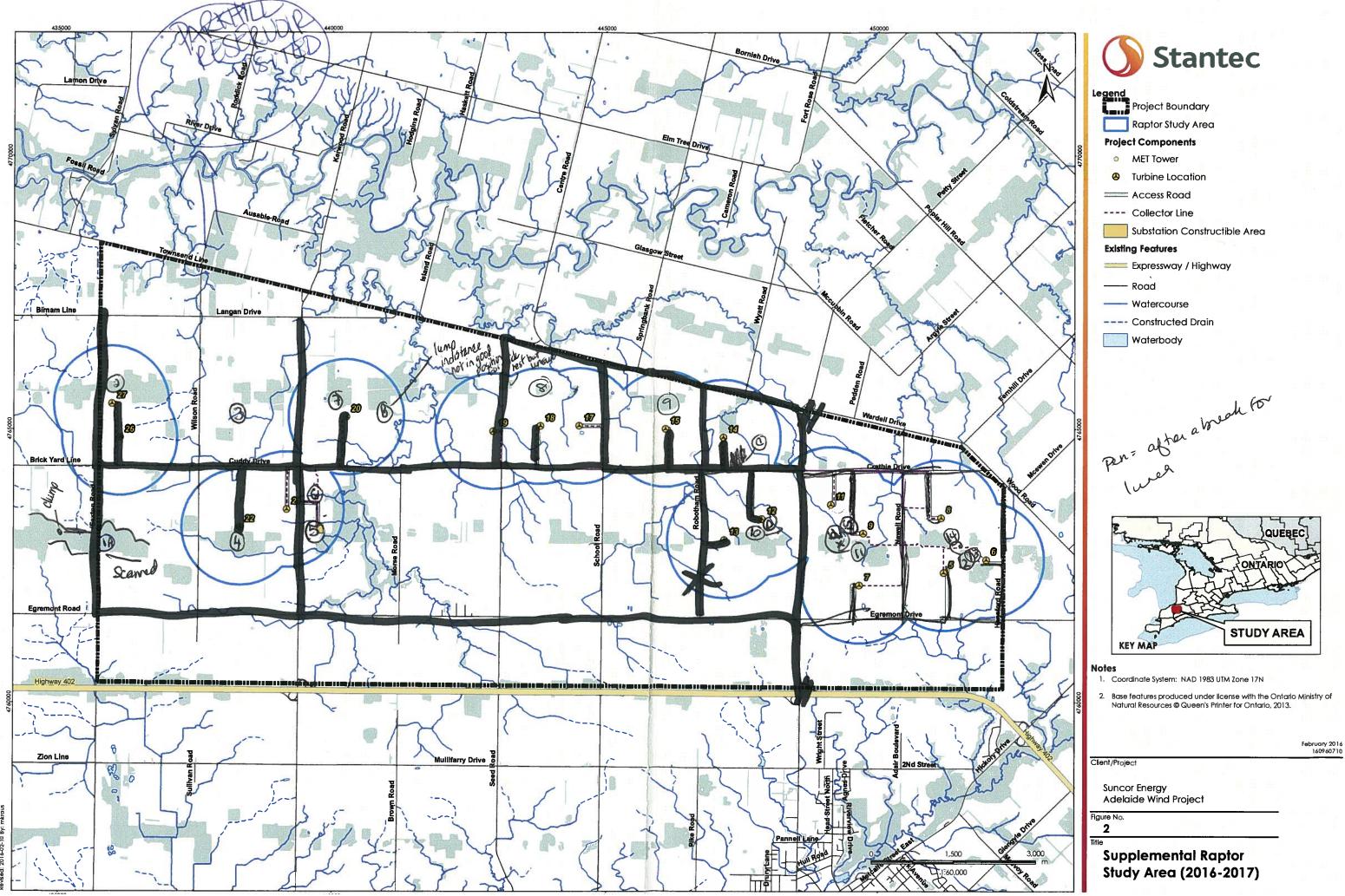
FORM 019 / REV- 2016-04-20

	Date: nd Time: Weather onditions:		9		Project Name: Alabara Personnel: UStraus NO VE SO CLOUD PPT PT (last 24-hrs) tion				Fresh				re ground re ground	≤ 15cm tall ≤ 25% > 30cm tall		VISIBILITY CLASS ⁴ Class 1 (Easy) Class 2 (Moderate) Class 3 (Difficult) Class 4 (Very difficult		
urbine No.	Area (m²)	Start Time	End Time	Duration	Species	Sex (m/f/u)	Bat Forearm ¹	Zone	UTM Coor	dinates Northing	Decomposition Code ²		Injury ³ Sustained	Distance from	from	Substrate	Visibility Class ⁴	Photo
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18			1305		Hogry	F	53	17	E 443 791	N 476 5062	machat	48h. 0	NON	4m	W	yraves	J	Phor
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		ne Visible	on reverse o / Broken L	imb / Brok	ken Neck / Brok	ken Wing	/ Cut in Ho		ecapitated	/ Head Injury ,	/ Severed Wing /	Wound to Abd		indiano (191	jusa.s your	Sabasone	Gležky	

	tec	0961	067		Project Name: <u>Adelaide</u> Field Personnel: <u>Melispa 87 Caus</u>					
	Date:	tpul f	5,2016	0						
Veather Con	ditions:	TEMP (°C): 10° - 184	c 1 -	D: -3	CLOUD:	PPT: PPT (in last 24 hr				
Start T	ime: 10	245			End Time:	1600				
otal KM Dri	ven:	1 50.	Km		S					
Raptor No. as on map)	Time	Species & No.	Age/Sex (if determined)	Height*	Habitat	Behaviour (i.e. hunting, perching, actively migrating				
\bigcirc	1045	TUVYXã	1 ?	Below ##	FORES	Biched & Iddead				
-						broken cavily tree				
\bigcirc	1100	ThVux	3	ABOUR	Forest	Biding thermals(
3	11:20	TUVUX2	2	At	чО					
(4)	1130-	There 2	?.	BOUE	Fabst	ν				
Q	1130	N.	2	At	Aq	As Hunting/Scalery				
6	1140	RTHA	Adult	Below.	Riparian	Peiched				
(\mathbf{a})	1200	Turles2	- ?	At.	Enest	Thermals (Scavery				
Q.	1210	tor n	?	At	Forest	4				
(9)	1240	TWUK	?	Above	Foot	4				
10)	1330	RTHAN	Adult	At	Forest	e rest - left				
Ĩ	1430	nuux2	?	Above	Frost	Society thermals				
2	1445	Turux4	?	At	Fores	2 goar J 2 perched				
B	1454	ETHA	Adult	AT	Ae	therting				
(4)	1510	TWM	2	Above	IDest	Seing hernoh				
(3)	1525	TUN		At	Ar					
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A active/ 60960710/ drawing/MXDNTerrestrial/Post_Con_Monitoring/2015/160960710_Post_Con_Monitoring_SupplementalRaptorStudyAteg_20150210, mm

Stantec 1.	70 Southgate Drive,	Guelph ON N1G 4P5		Nest Search Survey Form	
Project Number: /	6096100	,7	Project Name:	Adaude	non Contractor and a second
Date:		2016. Fi	ield Personnel:	Helisso A	trans
Start / End Time:	1015	- Martin Martin	ther Personnel:		
	.,00	speci	ify organization(s)	~	~
Weather Conditions:	TEMP (°C)	WIND		PPT (current)	
an and a second graph.			CLOUD	FFT (Culleril)	PPT (last 24 hrs)
escription of Area Sec	arched:	rospe.		1	
Ancientin	dage	ee woodlots.	Trop hoe	ar tubin	es scanne
carned be	hone of	t would be	010		
pecies Observed (with	h highest breedir	ng evidence code):			
-twu	RTHA.			CH	FROM.
mado	COGR				
BLICT	(460				
e noi	(rtc)0				
AMEB					
SOSP					
lests Found:	-	mitte in a second se		- 89:	
PECIES	BUFFER MARKED		DESCRI	PTION OF NEST LOCAT	
- DORN	Jew (radius, m)	Zone Easting Northing			THE REPORT OF A
TUVU - Nap		Zadult observ	rea sitting a	in the when	ge bosher of
post A	PA	and hollow, in the	amiddle.	Took off 7	ofly theira
		17 E 439709 N 476 2 adults observ and hollow in the effects thing E	for NS-	IDMINS @	1045 AM
Bumpea	21	EU NJ	What Gi	10 - DOMAN	anthadar.
istane(B)	NA.	later saw from	orney sid	- Your	
		haid to-	tell.		
OAm.	21	E N			
Clow	N/A	Crow nest			
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A a la				N I	
D RTHA	N)+.	17 = 447748 4776 Active - adult on	hest	D	maler 1 Aur
D RTHA	P)+.	Lopesy middle Aut	ood with both	face row -	org Cent Juis
D RTHA		Lopesy middle Aut	ood with both	face row -	aglert June
D RTHA E RTHA	N)+. NA	Approx. middle But 17 = 44953 M 479 Size consistent	63697 it	Liew location	fron theot
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		Client/Project	
1		Suncor Energy	
1	47 62500	Adelaide Wind Project	
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		Field Map Book	



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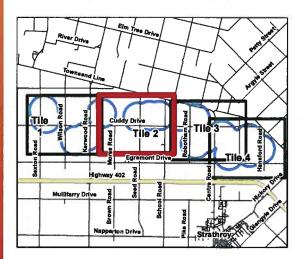
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<b>Stantec</b>
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Project Components
<ul> <li>MET Tower</li> </ul>
O Turbine Location
Access Road
Collector Line
Substation Constructible Area
Existing Features
Expressway / Highway
Road
Watercourse
Constructed Drain
Waterbody

## **DRAFT- For Field Use**



#### Notes

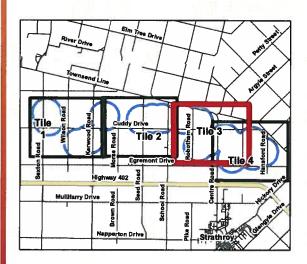
- 1. Coordinate System: NAD 1983 UTM Zone 17N
- 3. Orthoimagery © First Base Solutions, 2016. Airphoto Date- 2010

April 2016 160960710 Client/Project Suncor Energy Adelaide Wind Project Figure No. Tile- 2 itle Field Map Book





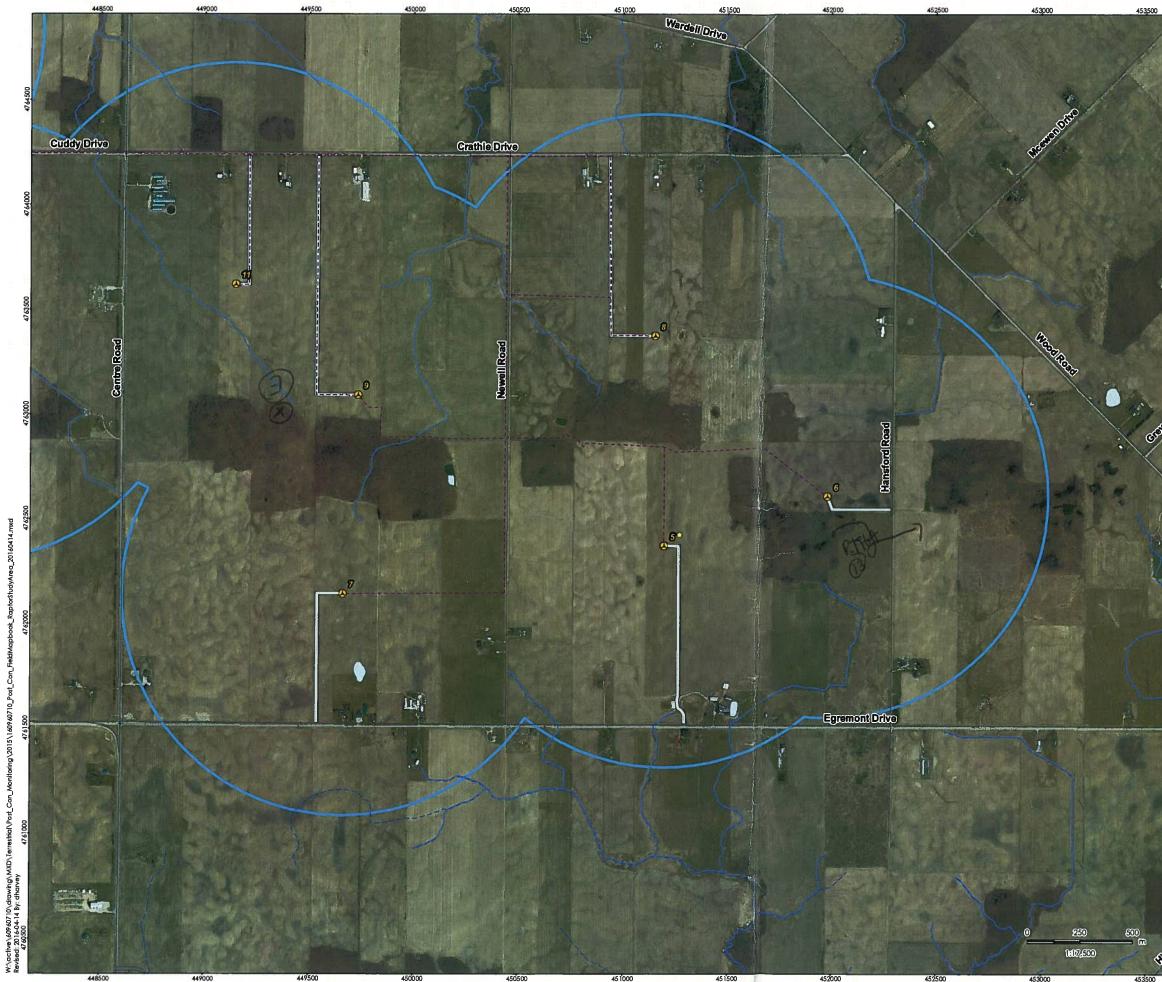
## **DRAFT- For Field Use**



#### Notes

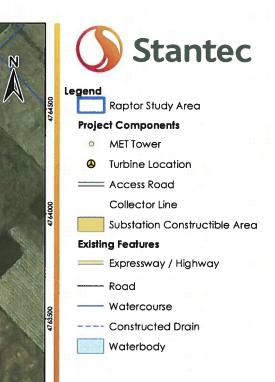
- 1. Coordinate System: NAD 1983 UTM Zone 17N
- 2. Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2013.
- 3. Orthoimagery © First Base Solutions, 2016. Airphoto Date- 2010

April 2016 160960710
Client/Project
Suncor Energy
Adelaide Wind Project
Figure No.
Title- 3
Title
Field Map Book

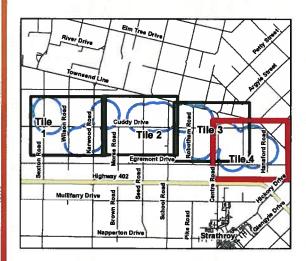


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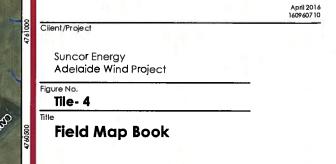


# **DRAFT- For Field Use**



#### Notes

- 1. Coordinate System: NAD 1983 UTM Zone 17N
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- 3. Orthoimagery © First Base Solutions, 2016. Airphoto Date- 2010

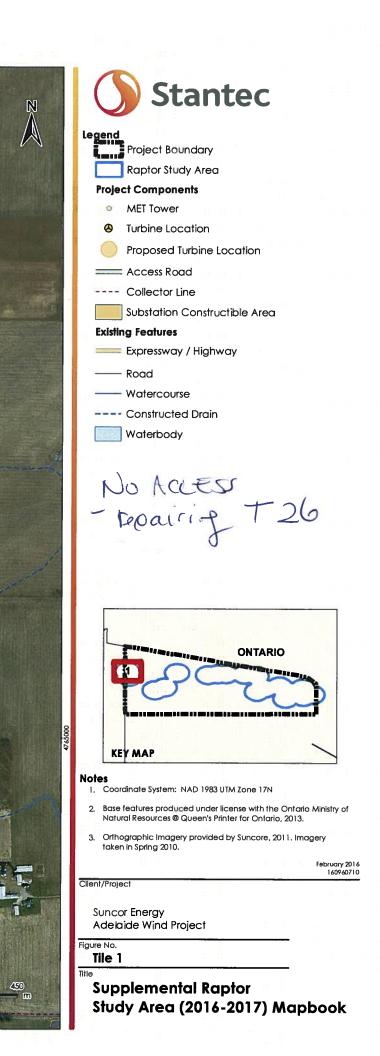


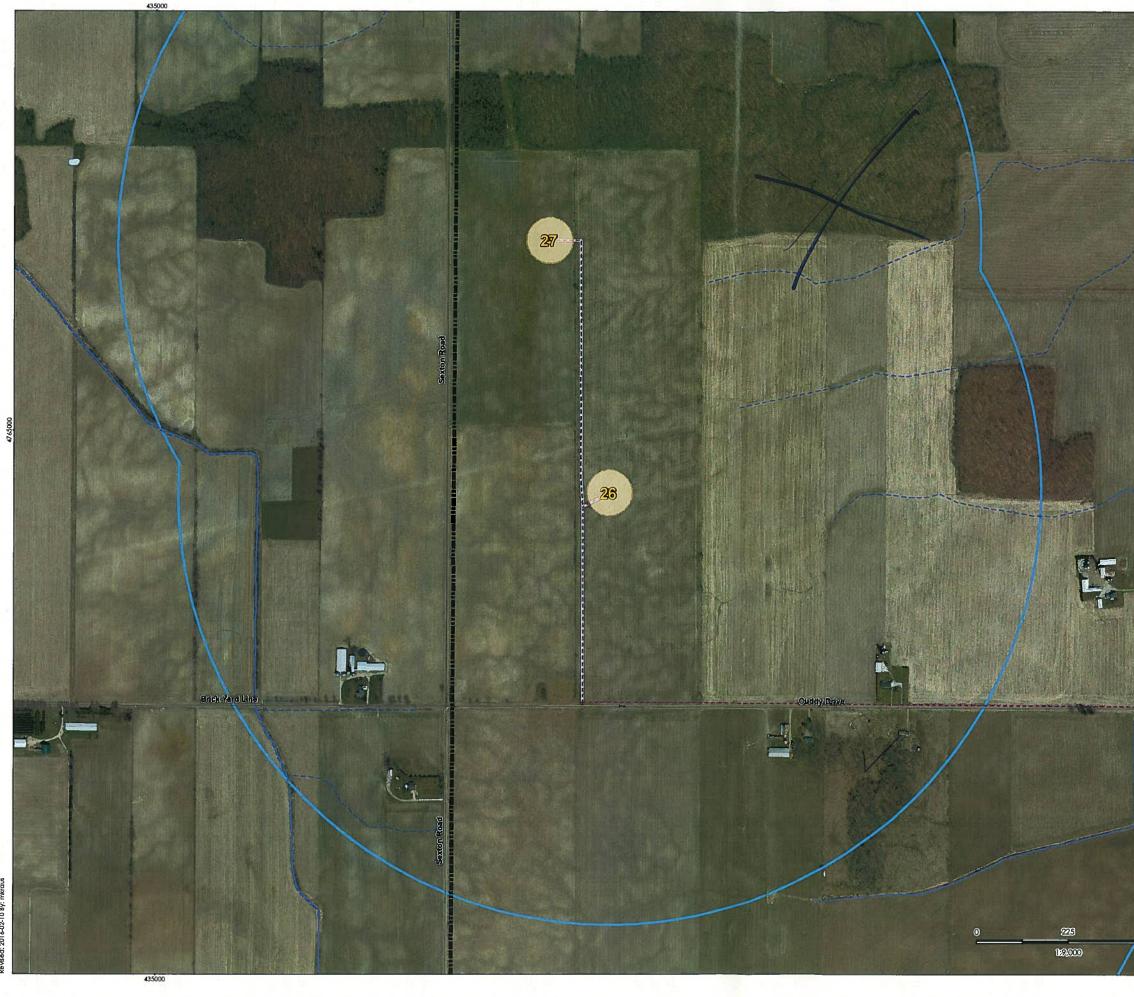
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Stantec	Stantec Consulting Ltd. 70 Southgate Drive Guelph, Ontario, Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493		Raptor Behaviour Driving Survey		
Project Number: 160	96106	7.	Project Name Field Person		delacolo
Weather Conditions:	Тепре:	Wind:	Cloud:		PPT in last 24 hrs:

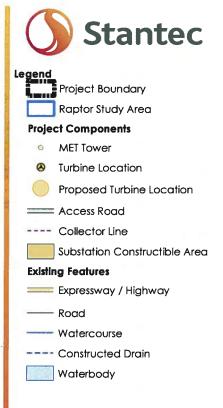
Raptor # (as on map)	Time	Species and #	Age/sex (if determined)	Height	Habitat	Behaviour (i.e. hunting, perching, actively migrating)
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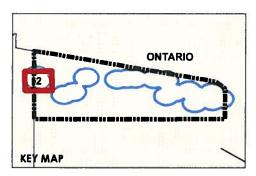




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 Orthographic Imagery provided by Suncore, 2011. Imagery taken in Spring 2010.

Client/Project

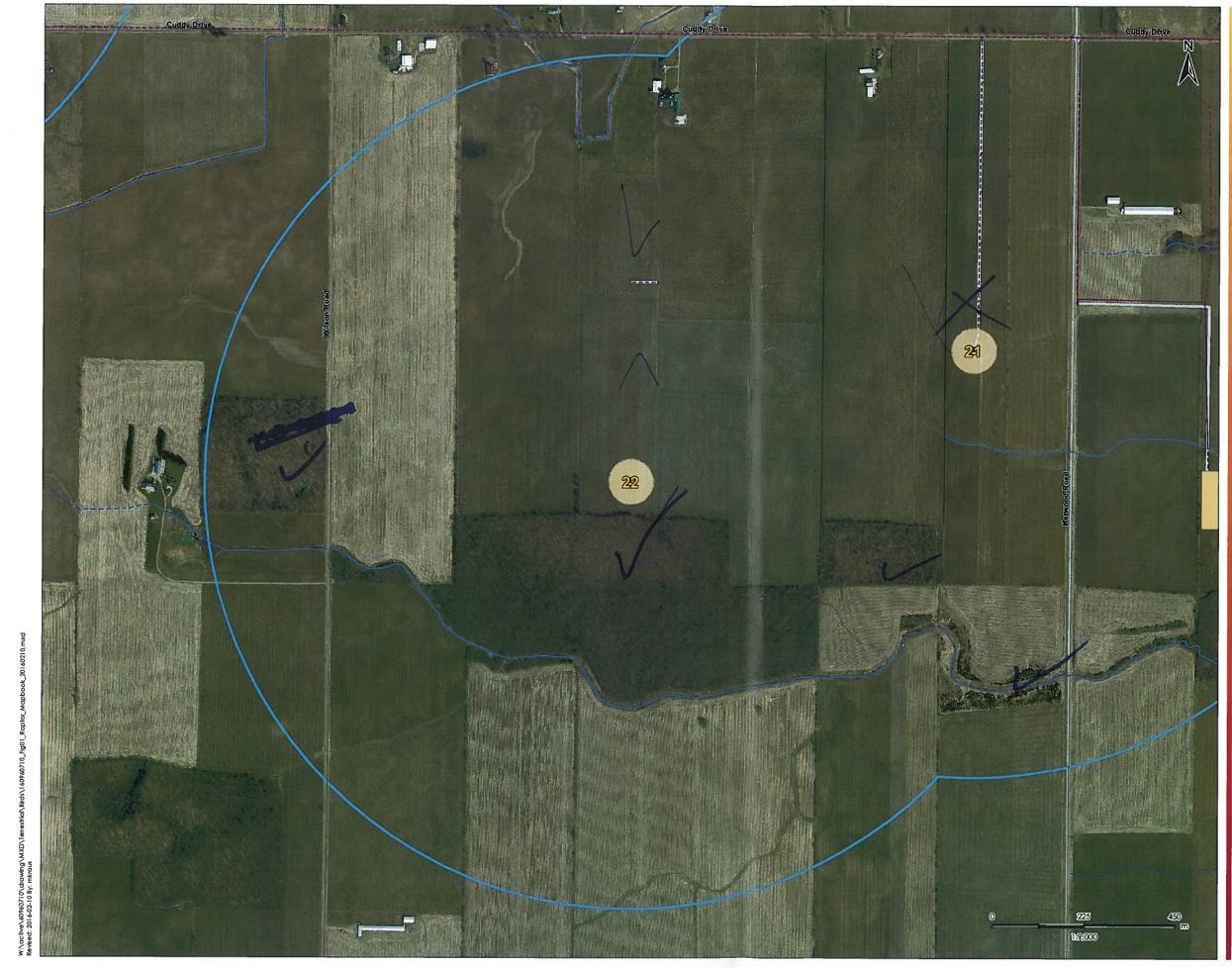
#### Suncor Energy Adelaide Wind Project

Figure No. Tile 2

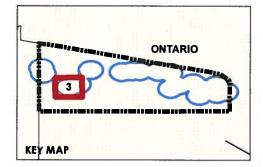
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# Supplemental Raptor Study Area (2016-2017) Mapbook

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Stantec
Legend Project Boundary
Raptor Study Area
Project Components
MET Tower
Output State And
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

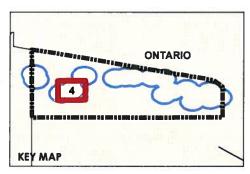
#### Figure No. Tile 3

Title



# **Stantec**

Project Boundary
Raptor Study Area
Project Components
MET Tower
Output State And
Proposed Turbine Location
Access Road
Collector Line
Substation Constructible Area
Existing Features
Expressway / Highway
Road
Watercourse
Constructed Drain
Waterbody



#### Notes

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- Orthographic Imagery provided by Suncore, 2011. Imagery taken in Spring 2010.

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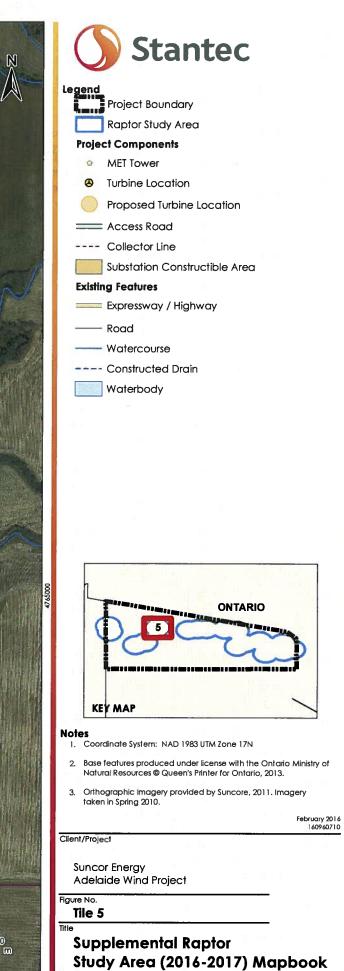
#### Client/Project

Suncor Energy Adelaide Wind Project

Figure No.

Tile 4

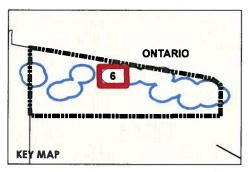






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Road
Watercourse
Constructed Drain
Waterbody

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- Notes
  1. Coordinate System: NAD 1983 UTM Zone 17N
- 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 6** 

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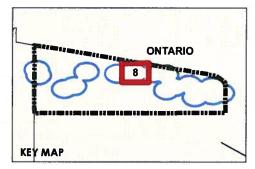
# Study Area (2016-2017) Mapbook



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### Client/Project

Suncor Energy Adelaide Wind Project

Figure No.

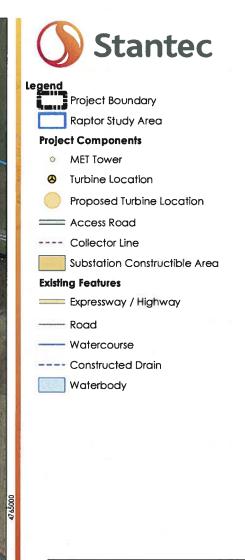
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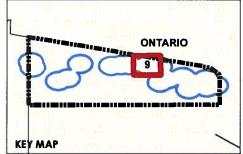


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1, Coordinate System: NAD 1983 UTM Zone 17N

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#### Client/Project

Suncor Energy Adelaide Wind Project

Figure No. **Tile 9** 

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Legend Project Boundary

Raptor Study Area

### **Project Components**

- MET Tower
- Proposed Turbine Location
- Access Road

---- Collector Line

Substation Constructible Area

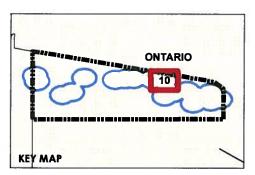
### **Existing Features**

Expressway / Highway

----- Road

----- Watercourse

- ---- Constructed Drain
- Waterbody



#### Notes

- Coordinate System: NAD 1983 UTM Zone 17N
- Orthographic Imagery provided by Suncore, 2011. Imagery taken in Spring 2010.

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Client/Project

Suncor Energy Adelaide Wind Project

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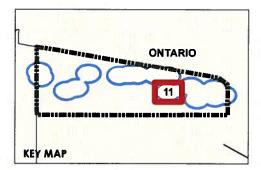
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Substation Constructible Area
Existing Features
Expressway / Highway
Road
Watercourse
Constructed Drain
Waterbody



- Notes
  1. Coordinate System: NAD 1983 UTM Zone 17N
- 3. Orthographic Imagery provided by Suncore, 2011. Imagery taken in Spring 2010.

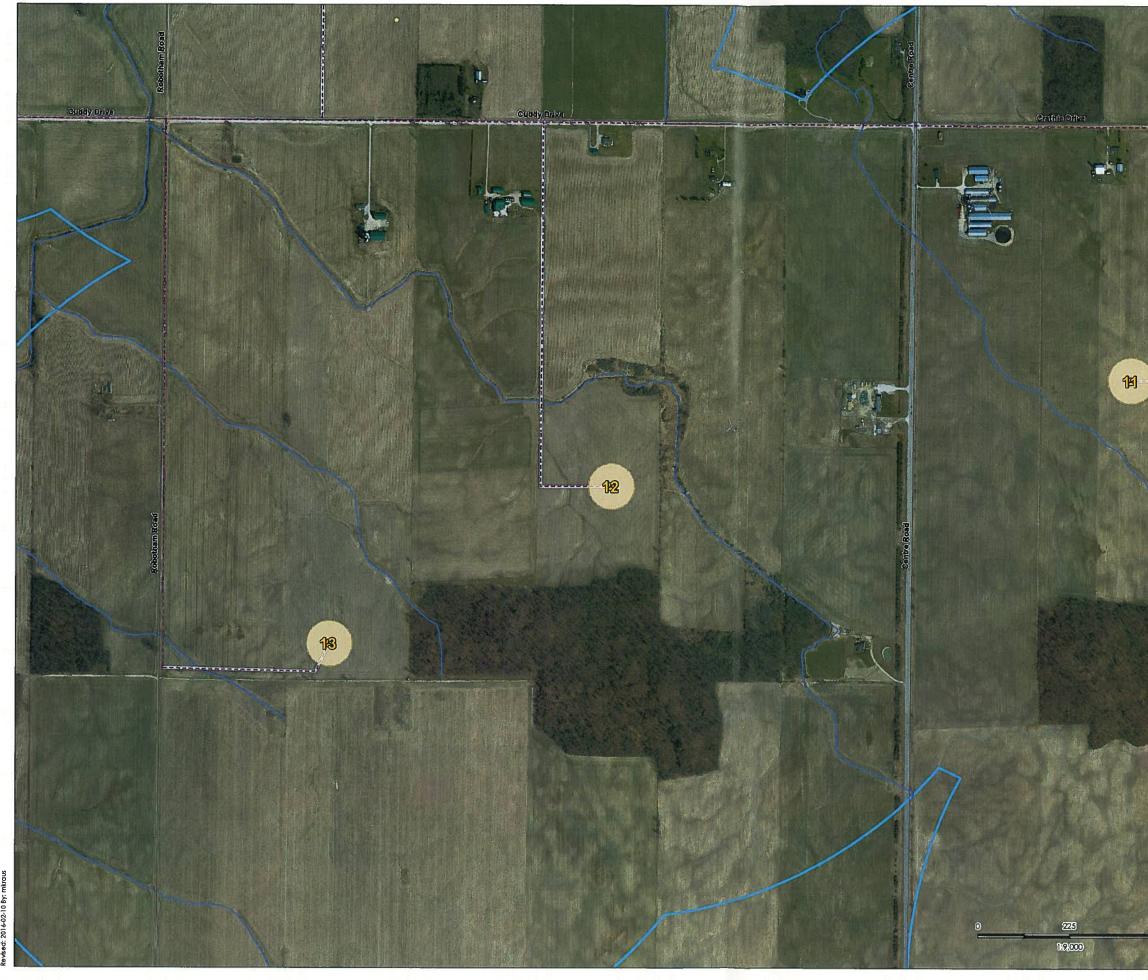
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### Client/Project

Suncor Energy Adelaide Wind Project

Figure No. **Tile 11** 

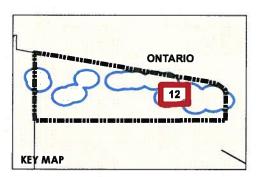
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#### Notes

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Suncor Energy Adelaide Wind Project

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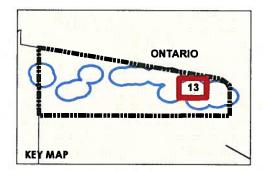
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Project Components
MET Tower
Output State And
Proposed Turbine Location
Access Road
Collector Line
Substation Constructible Area
Existing Features
Expressway / Highway
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Watercourse
Constructed Drain
Waterbody



#### Notes

- 1. Coordinate System: NAD 1983 UTM Zone 17N
- 3. Orthographic Imagery provided by Suncore, 2011. Imagery taken in Spring 2010.

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#### Client/Project

Suncor Energy Adelaide Wind Project

#### Figure No. **Tile 13**

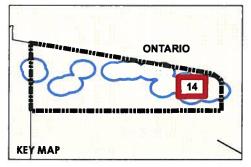
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Waterbody



#### Notes

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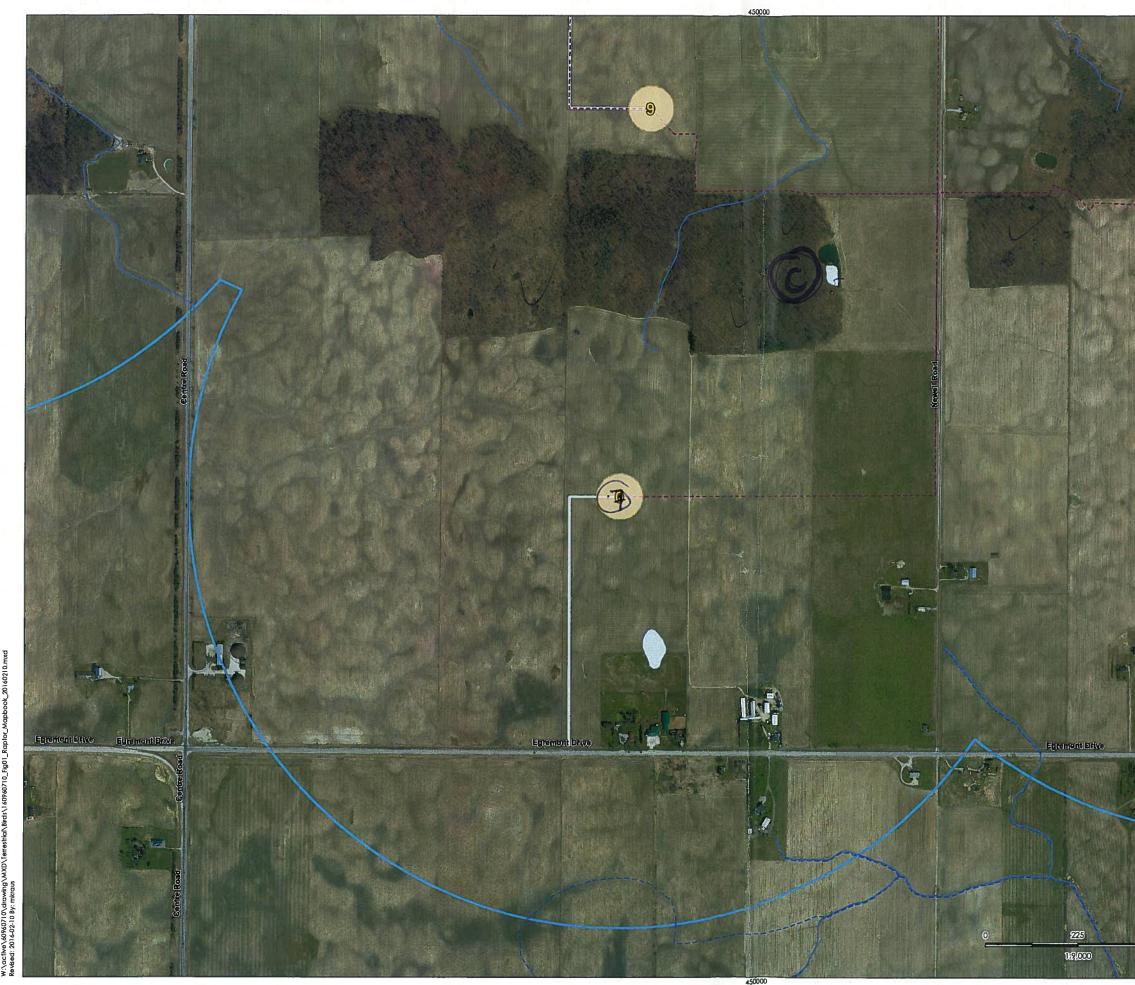
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Client/Project

Suncor Energy Adelaide Wind Project

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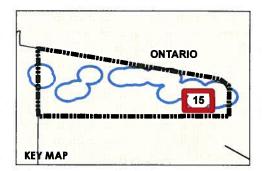
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Project Components
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Proposed Turbine Location
Access Road
Collector Line
Substation Constructible Area
Existing Features
Expressway / Highway
Road
Watercourse
Constructed Drain
Waterbody



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.
- Orthographic Imagery provided by Suncore, 2011. Imagery taken in Spring 2010.

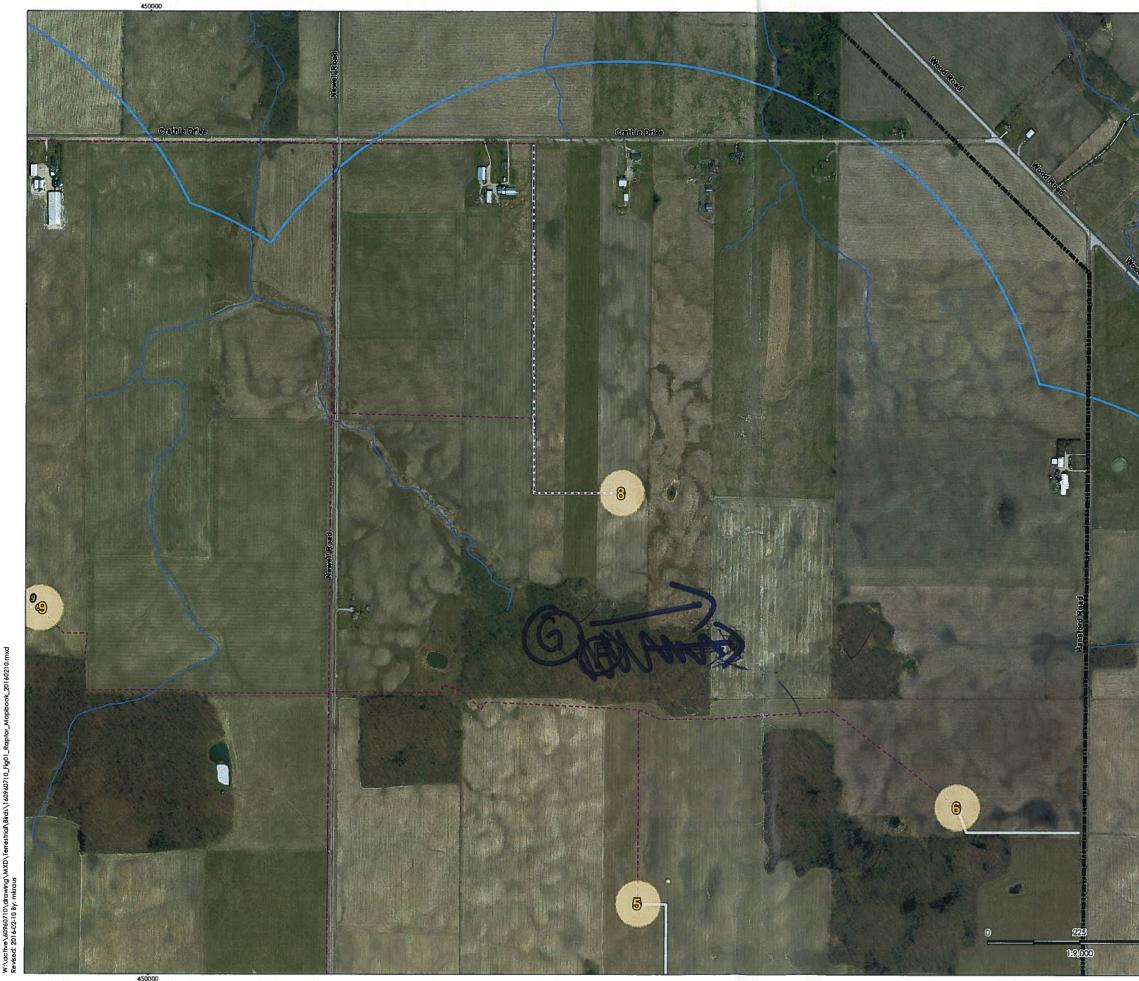
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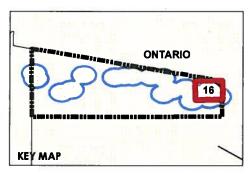
Suncor Energy Adelaide Wind Project

Figure No. **Tile 15** 

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<b>Stantec</b>
Legend Project Boundary
Raptor Study Area
Project Components
MET Tower
Output State And
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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- Orthographic Imagery provided by Suncore, 2011. Imagery taken in Spring 2010.

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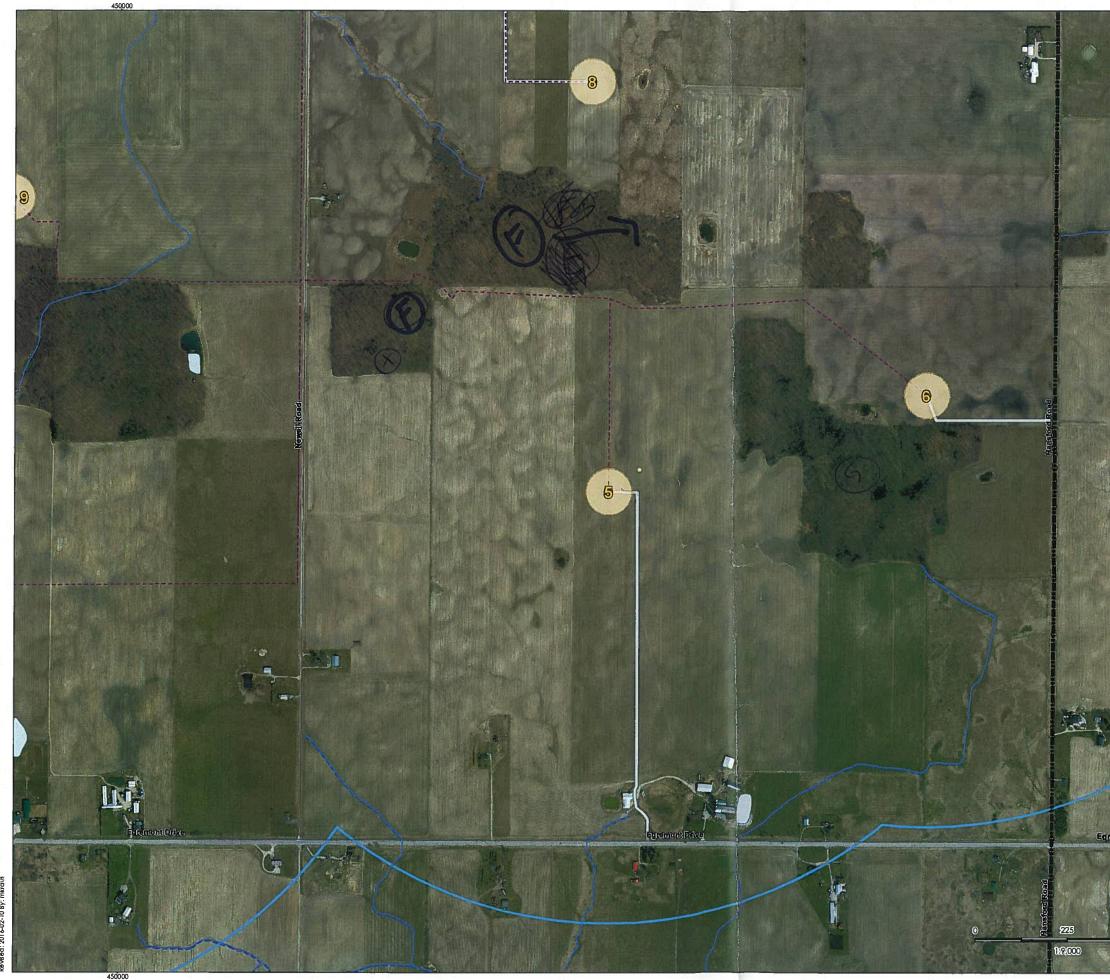
Suncor Energy Adelaide Wind Project

Figure No.

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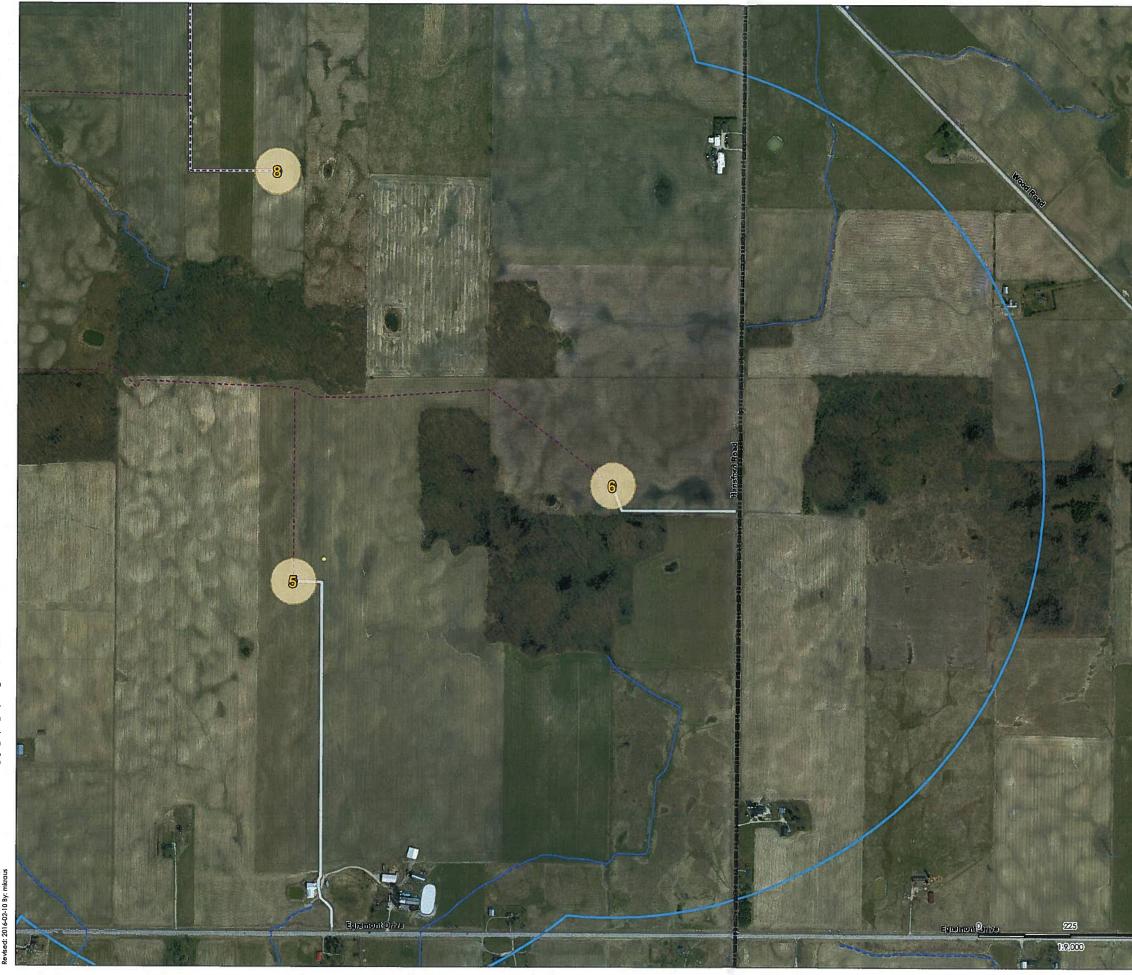
# Supplemental Raptor Study Area (2016-2017) Mapbook

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	Collector Line
	Substation Constructible Area
	Existing Features
1	Expressway / Highway
	Road
	Watercourse
	Constructed Drain
	Waterbody
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	i jud latales
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	ONTARIO
	KEY MAP
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450	Supplemental Raptor Study Area (2016-2017) Mapbook



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Access Road
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Substation Constructible Area
Existing Features
Expressway / Highway
Road
Constructed Drain
Waterbody

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#### Notes

KEY MAP

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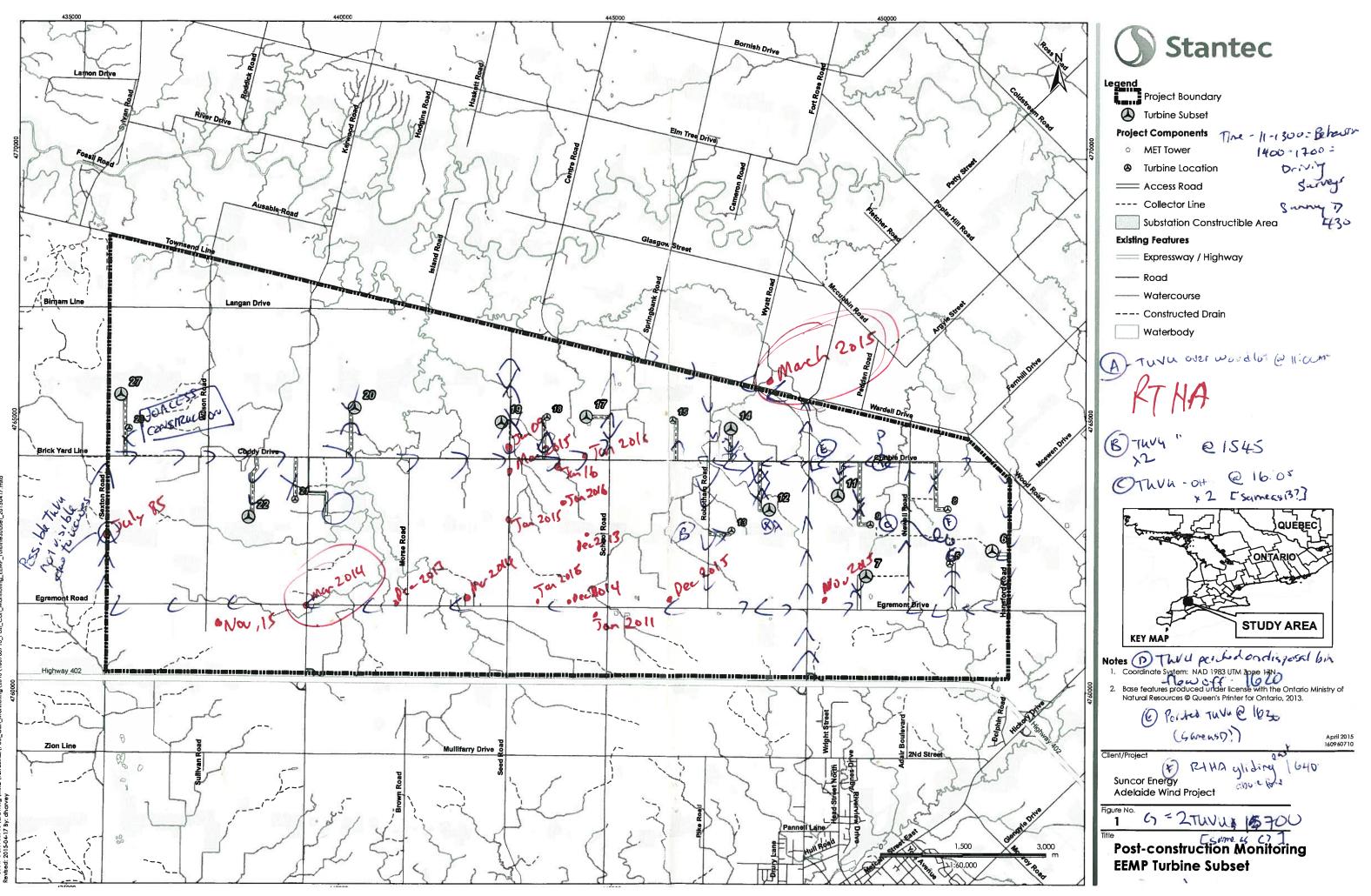
Suncor Energy Adelaide Wind Project

Figure No.

Tile 18

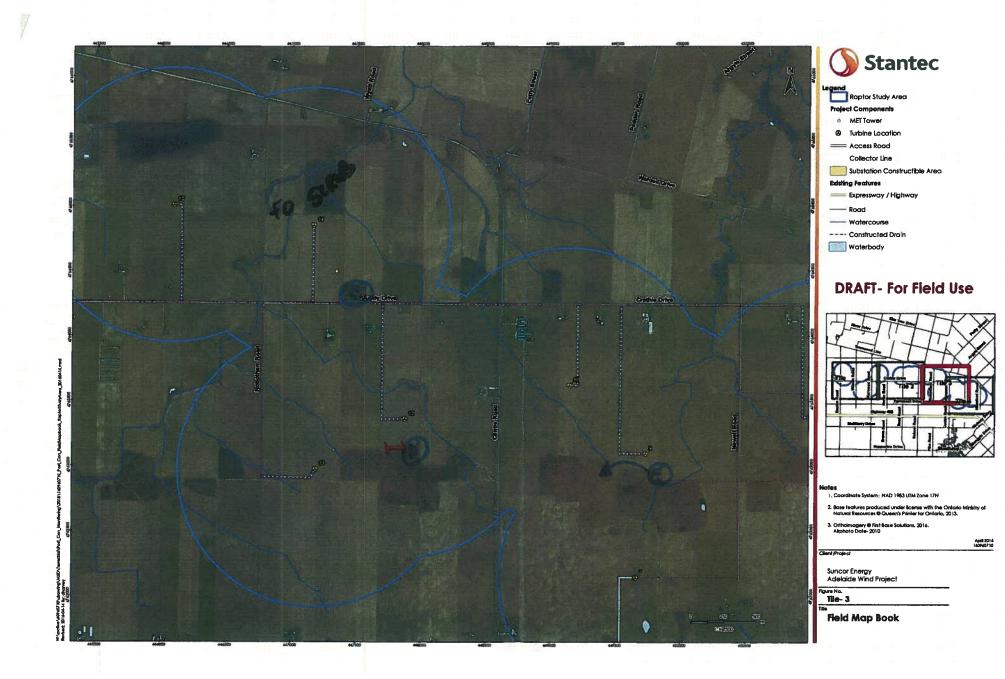
# Supplemental Raptor Study Area (2016-2017) Mapbook

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Tel:	70 Southgate Drive elph, Ontario N1G 4P5 : (519) 836-6050 c: (519) 836-2493			Nest Monitoring Survey Form	
	6096106	<del>]</del> .	Project Name:	Adelaid	ę .
Feature ID:	-12	UTM Coordinates:			\$ 339.
	(indicate on map) Pod-tailed		Zone Easting	North	
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Date: Time: Weather Conditions: NOTES:	TEMP (°C)	WIND 2_	CLOUD (00	PPT	
Date: Time: Weather Conditions: NOTES:	TEMP (°C)	WIND 2_	CLOUD (00	PPT	



Stantec	Stantec Consulting Lt 1 – 70 Southgate Drive Guelph, ON Canada NIG 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493			aptor Behavi /ational Surv	
Project Number	16096106	77	Project Name:	Adelan	gli
Date	May 12/11	e	Field Personnel:	ristra	us
Weather Conditions:	TEMP (°C):	WIND:	CLOUD:	PPT:	PPT (in last 24 hrs):
Station #:	RTHA Dest		UTM:	7 447748	\$ 476539.
Start Time: 9	30		End Time:	1015	
Raptor Species:	RTHA		If in kettle, indicate size:	$\setminus$	
Raptor #:	1	11	Age:	$\overline{X}$	Adult.
				e.g. juveni	le 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	(se	Be def	ehavio Inition		ow)	Height* (m)	Habitat Unit #	Notes
	1	2	3	4	5		(from table above)	
930	•	1			X	20	A	Adult on rest 930-10:15
	_				-			
				ļ				

* 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

Pg. of Signature: ield Personnel)

Quality Control: This form is complete

Signature

(Project Manager) REV: 2011-05-06 / FORM 036-a

Stantec Project Number Dai Weather Conditions Station #: Start Time: 1 Raptor Species: 6	e: June TEM 23-2 Mart D	<b>6, 20</b> P (℃):	V	vind: m/h	2.1.1.01
Dai Weather Conditions Station #: Start Time:	e: June TEM 23-2 Mart D	<b>6, 20</b> P (℃):	V	<u>-</u>	Field Personnel: Anna Corrigen CLOUD: PPT: PPT (in last 24 hrs
Weather Conditions Station #: Start Time:	TEM 23-2 M ^{AVY} D	P (°C):	V	<u>-</u>	CLOUD: PPT: PPT (in last 24 hrs
Station #: Start Time: [	23-2 M ^{MM} D			<u>-</u>	2 x (0x) 0x
Start Time:	Mart D				~ Inunderstorm
	30				UTM: from parking sput: 171, 0447864 E.
Raptor Species:					End Time: 13.30 mm, 476 33
	TAA				If in kettle, indicate size: No Kettle
Raptor #:	Mr RTHI	+ 1			Age: Adult
Nest ID:	$n (\ell)$	THA 1	)		(e.g. juvenile or adult)
- •	•			in the cheer	
Provide a descrip	don or eat	Habi	tat Type	in the obser	
Unit #			ssland, crop,	wetland)	Description
1 Wood	lund (	FOD	)		Hickory, Oak and Ash
2 Wint	1 Wheat	$(A_{\rm h})$			Makes up majority ut area north of
3 012	Coin (An	)			Located North in Winter Wheat
	0				INTER CA MINDE MARAL
	*2				
Provide a line ent	ry for each	chang	e in behav	ior or habita	t. Note: while losting for nest at 10:15, RTU
(566	Behaviour definitions be	Nole	Height*	Habitat Unit #	Junting MUST, away flom f
	2 3 4		(m)	(from table above)	Notes
11:35	X		50	1 1	Gliding Mast
11:43 X			50	1	
12.08	X		75	1	Kittling over a 20 wide aven, then went into FOD (
0.00			<u>5</u> 0	1	I'm Lust, Then such ost of New.
12:24 V			<u> </u>		Over area where nest is thought to be
			1 A	1	
(2 27	X		50 Un	1	11
$\frac{12:24}{12:36} \times \frac{12:36}{7}$ $\frac{12:38}{12:38} \times \frac{12:34}{7}$			50 40 50	1 2 3	

* *

Time	(56	B e def	ehavio finition	ur Is bel	ow)	Height* Habitat	Unit#	Notes					
	1	2	3	- 4	5	(m)	(from table above)						2 (A)
2:40		X				50	3	Moved	North	tio	of	side	
	wal.								· · · · · · · · · · · · · · · · · · ·	0.025.010			
	-	1								2510	-		
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			8			4-1-10-10-10-10-10-10-10-10-10-10-10-10-1	 				·		_
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							20 20						
				1									
					~								
	ii						<i>h project manag</i> mal. without win					e -	

2 - Flapping: Flight powered by wingbeats
 3 - Gliding: Flight in straight line without wingbeats
 4 - Hovering: Hovering with or without wingbeats
 5 - Perched: Perching

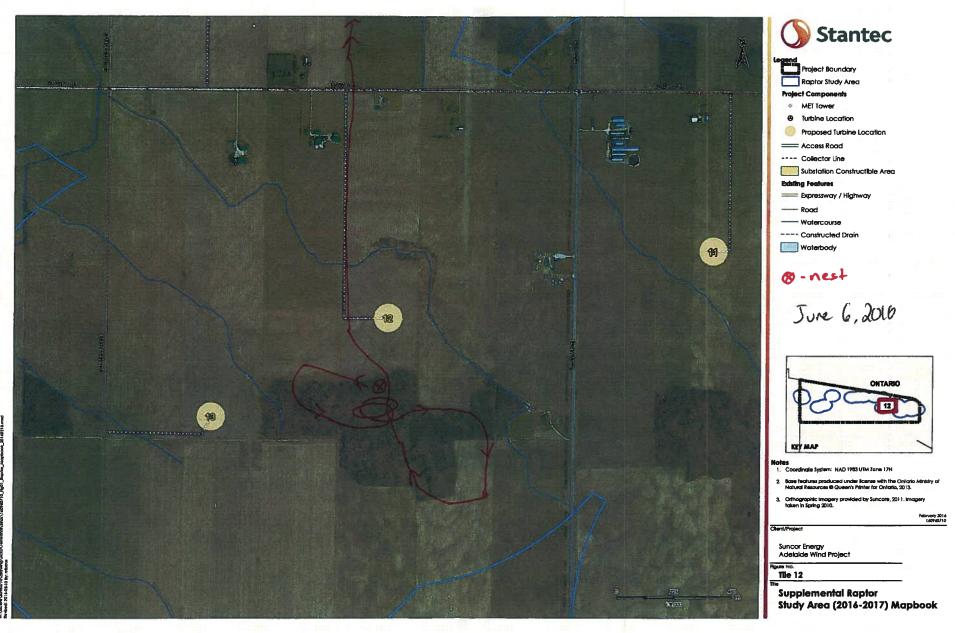
Pg. 2 of 2 Signature:

Quality Control: This form is complete 2 & legible 2. フ Signature:

als w:\resource\internal info and teams\field forms\birds\windfarm birding\form_036-a_raptor-behaviour-observational-survey_2-sided.docx

(Field Personnel)

(Project Manager) REV. 2011-05-06 / FORM 036-a



Stantec	<b>Stantec Consulting Ltd</b> 1 – 70 Southgate Drive Guelph, ON Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493		Raptor Behaviour Observational Survey Form					
Project Number	16096100	7.	Project Name:	Adelaide				
Date	June 15,2	016.	Field Personnel:	M. Straus				
Weather Conditions:		WIND: 2	CLOUD:	PPT: light Rain	PPT (in last 24 hrs):			
Station #:	Turbine 12		UTM: [	7 447748	476339			
Start Time:	:00Am		End Time:	3:00				
Raptor Species:	ETHA nost		If in kettle, indicate size:	0				
Raptor #:	ø		Age:	(e.g. juvenile	or adult)			

### Provide a description of each habitat unit within the observational area.

Habitat Unit #	(i.e. woodlan	Habitat Type d, grassland, crop,/w	etland)	Description
A	Wheat			
B	Wood bot		10 ~ 0 8	observed.
			1.CLA	0.500
		p		
			***************************************	

# Provide a line entry for each change in behavior or habitat.

Time	(5		<b>ehavi</b> c finitior	our ns/belo	ow)	Height*	Habitat Unit #	Notes
Time	1	2	3	4	5	(m)	(from table above)	Notes
	-							
64. A.S.	-	1	+				2100001100 20 ³ (1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	
			/				20 N 10 10 10 10 10 10 10 10 10 10 10 10 10	
	-	$\left  \right $				nin talah ku ang salang salang salang sa		67-6
* Height of L	blade swe	ep val	ries fro	m proj	ect to p	roject: check w	ith project manager.	

1 - Thermal Society fulling): Society in a circle within a thermal, without wingbeats
 2 - Flapping: Flight powered by wingbeats
 3 - Gliding: Flight in straight line without wingbeats

Field Personnel)

4 – Hovering: Hovering with or without wingbeats 5 – Perched: Perching

Pg. of Signature:

Quality Control: This form is complete 2 & legible 2

Signature:

(Project Manager) REV: 2011-05-06 / FORM 036-a

Stantec	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 Nam	ne: Adelaide	Wintfacm		
Date	JUNE 20	2016	Field Personn	iel: Brennan Z	bernayer		
Weather Conditions:	TEMP (°C): 18 - 26	WIND: 18-20 NW	CLOUD: 50100	PPT:	PPT (in last 24 hrs):		
Station #:	urbine 12		UTM:	1			
Start Time:	9:15		End Time:	10:15			
Raptor Species:	RTHA		If in kettle, indicate size:	1			
Raptor #:			 Age: 	Avul-	le or adult)		

### Provide a description of each habitat unit within the observational area.

Habitat Unit #	Habitat Type (i.e. woodland, grassland, crop, wetland)	Description
)	Woodland / Nest	Nest area
2	Agriculture.	Secon
	J	

Provide a line entry for each change in behavior or habitat.

Time	(50		<b>ehavio</b> finitiori		 wc	Height*	Habitat Unit #	
1 mie	1	2	3	4	5	(m)	(from table above)	Notes
09:15								No nests visible, no ROTHA seen
10:12	Х					40-60	2	Seen For 4 min (adult)
10:26	$\propto$					40-50	2	abilit seen for Smin.
10:40			K			30	2	saw briefly over tree line law
11:00	$\times$					40-50	2	Apilt Gen for 2 min
11:15							-	No RTHA amently observed

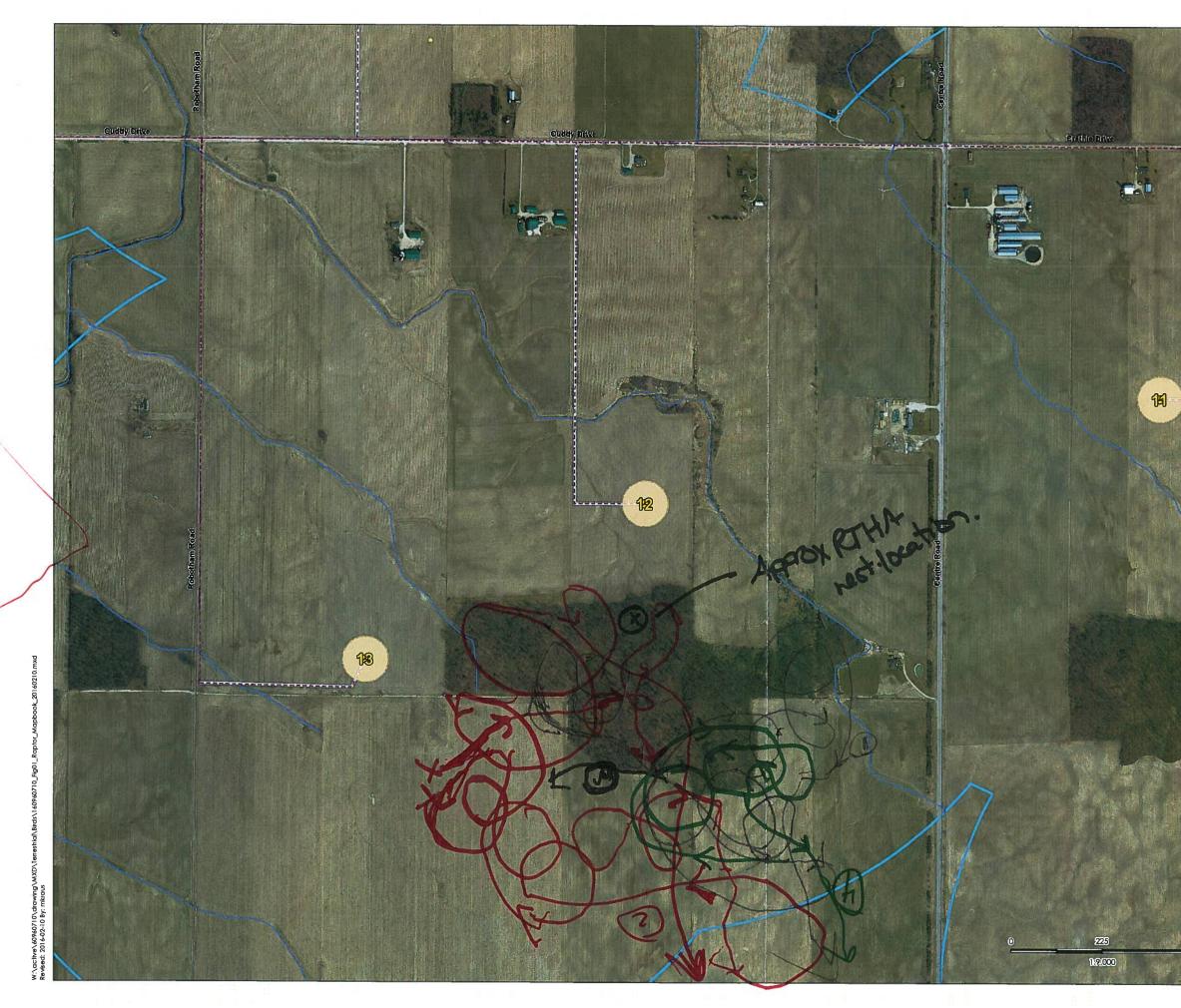
4 – Hovering: Hovering with or without wingbeats 5 – Perched: Perching

C QAT

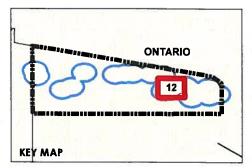
Pg. ____of ____ Signature: (Field Personnel)

Quality Control: This form is complete 2 & legible Signature:

(Project Manager) REV: 2014-05-06 / FORM 036-a







#### Notes

1. Coordinate System: NAD 1983 UTM Zone 17N

- Base features produced under license with the Ontario Ministry of Natural Resources @ Queen's Printer for Ontario, 2013.
- 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

## Supplemental Raptor Study Area (2016-2017) Mapbook

450

Stantec	Stantec Consulting Ltd. 1 – 70 Southgate Drive Guelph, ON Canada NIG 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493		aptor Behaviour vational Survey Form
Project Number Date		Field Personnel:	Bonnan Oberman PV
Weather Conditions:	TEMP (°C): WINE 28-51 5-15	D: CLOUD: W 10 - 5	PPT: PPT (in last 24 hrs):
Station #:	T12	UTM:	1
	0 <u>9:58</u> 274A	End Time: المصلحة End Time: المحلفة الم	58
Raptor #:	0	indicate size: 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	
	• J	
-		

# Provide a line entry for each change in behavior or habitat.

Time	(56		ehavio Inition	our ns belc	w)	Habitat Height* Unit #						
	1	2	3	4	5	(m)	(from table above)			Notes		
09:52							1	No	RTHA	present		
11:58	· · · · · · · · · · · · · · · · · · ·							NG	RTHA	present Observes		
			-									
									-			
Height of blade				- 5								

Signature:

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:

Pg.

Quality Control: This form is complete

(Field Personnel)

(Project Manager) REV: 2011-05-06 / FORM 036-a

Raptor Behaviour Observational Survey Form
Project Name: Afelaide Field Personnel: Burney Obermayer
CLOUD: PPT: PPT (in last 24 hrs):
UTM: $\Lambda/a$ End Time: $10546$ If in kettle, indicate size: $\Lambda/a$ Age: $\Lambda/a$

# Provide a description of each habitat unit within the observational area.

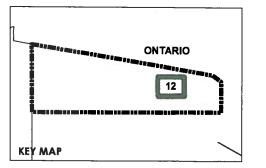
Habitat Type (i.e. woodland, grassland, crop, wetland)	Description
)	
	Habitat Type (i.e. woodland, grassland, crop, wetland) woodland / nest area Agricul fore

# Provide a line entry for each change in behavior or habitat.

Time	(54		ehavio finitior	our Is belo	ow)	Height*	Habitat Unit #	
	1	2	3	4	5	(m)	(from table above)	Notes
8:40	ļ	[	 	ļ				No ETHA observed
09:52	$\underline{\times}$	ļ		ļ		30	2	ONG Adult Sparing, went
								No print observed and hart soaring, went below frectine around
								nest area.
10:40								No BANKA Currenty observed.
								RTHA
1 – Thermal S 2 – Flapping: 3 – Gliding: F 4 – Hovering: 5 – Perched:	oaring Flight   light in Hover	(kittiin powere straigh ing with	n <b>g)</b> : S ed by v nt line v	oaring vingbea without	in a cir ats : wingb	cle within a ther	<i>h project manag</i> mal, without wir	igbeats
Pg. 1 of 1	-	$\sum$	,	1		De	Q	uality Control: This form is complete
Signatu	re: /	2		(Fie	eld Per	sonnel)		Signature. (Project Menager)
						·		REW: 2011-05-06 / FORM 036-a



Q	Stantec
Legend	Project Boundary
	Raptor Study Area
Projec	ct Components
0	MET Tower
۲	Turbine Location
	Proposed Turbine Location
	Access Road
	Collector Line
	Substation Constructible Area
Existin	g Features
	Expressway / Highway
1	Road
	Watercourse
	Constructed Drain
	Waterbody



Notes
1. Coordinate System: NAD 1983 UTM Zone 17N

- Base features produced under license with the Ontario Ministry of Natural Resources @ Queen's Printer for Ontario, 2013.
- 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

Star	ntec		1 – 70 Guelp Canad Tel: (5	) Sout h, ON da N1 519) 8	nsultin hgate D G 4P5 36-605( 336-249	vrive			Obs	Ra serv	aptor Behavio vational Surve	our ey Form	2
Proje	ct Num	nber:	160	996	1067	<u>,                                     </u>			Project N	Name:	Adelaicle W	nd Farm	
l	-0	Date:	Ju	yly_	11,	2016			Field Pers	onnel:	A 0	Nyan	
Weather Co	nditio	ns:		темр 1 - 2	(°C): 25°C	i	VIND: -2	40-	CLOUD: 70%		PPT:	PPT (in last 24	hrs):
Stati Start 1	on #: Fime:	р 8.5	5 Jaw	۸					UTM End Time		,0447864E,4 153am	1763351 N	(Krom
Raptor Spe	cies:	Rĩ	ΉA				<u>, , , , , , , , , , , , , , , , , , , </u>	in	lf in kettle dicate size	, ,	to Kettle		
Rapt	tor #:	4	RTH	A	]				Age		dult		
1	Nest	110 :	D								(e.g. juvenile	e or adult)	
Provide a	desc	riptic	on of	each	n habi	tat unit with	nin the obse	rvati	onal area	a.			
Habitat Unit #					Habi	tat Type ssland, crop,					Description		]
_)	MD		1	1.		est is)							
2			Hure				99999 - Sanga Sanang Land, Sanang Sanah - pi sanga Sanah Sanah				999 1992 1997 - Mar - Mar - Mar and San Anna Anna Anna Anna Anna Anna Anna		
			<u></u>				************						
							************						
	l <del>a</del>										98 - 1 mar   1 mar - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 -	99 Million and a state of the spin of the State of the Association of the State of the State of the State of the	
Provide a l	ine e	ntry	for e	ach	chang	e in behav	ior or habita	 at.					]
	(00		ehavio finition		0.4/1	Unight	Habitat					<u> </u>	
ìme	(see definitions below)       1     2     3     4     5					Height* (m)	Unit # (from table above)		Notes				
853								S	that m	cnil	my for RTHA	· · · · · · · · · · · · · · · · · · ·	
6;53	$\square$							F	ind "	Mar A	toring for RT	Γ.I.A	
											Wing for A		

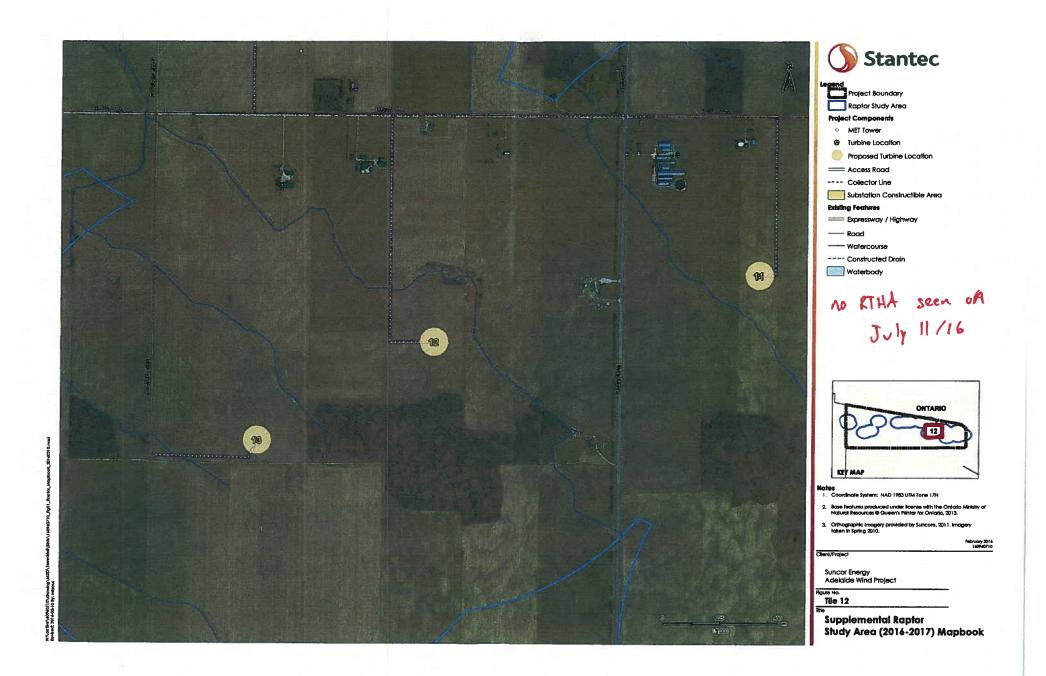
Time	(56	Behaviour see definitions below)				Height*	Habitat Unit #	
	1	2	3	4	5	(m)	(from table above)	Notes
853					<u> </u>			Start monitoring for RTHA
10;53								End monitoring for RTHA
·			_					
						and and a provide state of the second state of the		
Height of bla	de swei	n vari	es fror	n oroie	ect to p	miest: check wi	th project manage	

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 - Gilding: Flight in straight line without wingbeats
4 - Hovering: Hovering with or without wingbeats
5 - Perched: Perching

Pg. ] of ] Signature:

(Field Personnel)

Quality Control: This form is complete 2 & legible 2 Signature (Project Manager) REV: 2011-05-06 / FORM 036-a



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 Comigan					
Weather Conditions: TEMP (°C): WIND: 19 - 25°C 10-12 Km/K;S	CLOUD: PPT: PPT (in last 24 hrs					
Station #:	UTM: 17T, 0447864 E, 4763351,					
Start Time: 74:51an Raptor Species: DTUA	End Time: 9 Slan If in kettle, indicate size: N/a Age: Adult					
Raptor #: RTH1						
Nest 10-D	(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
<u> </u>	FOD (were nest is)	South of turbine 12
2	Agriculture	agricultural fields surrounding FOD tenture

Provide a line entry for each change in behavior or habitat.

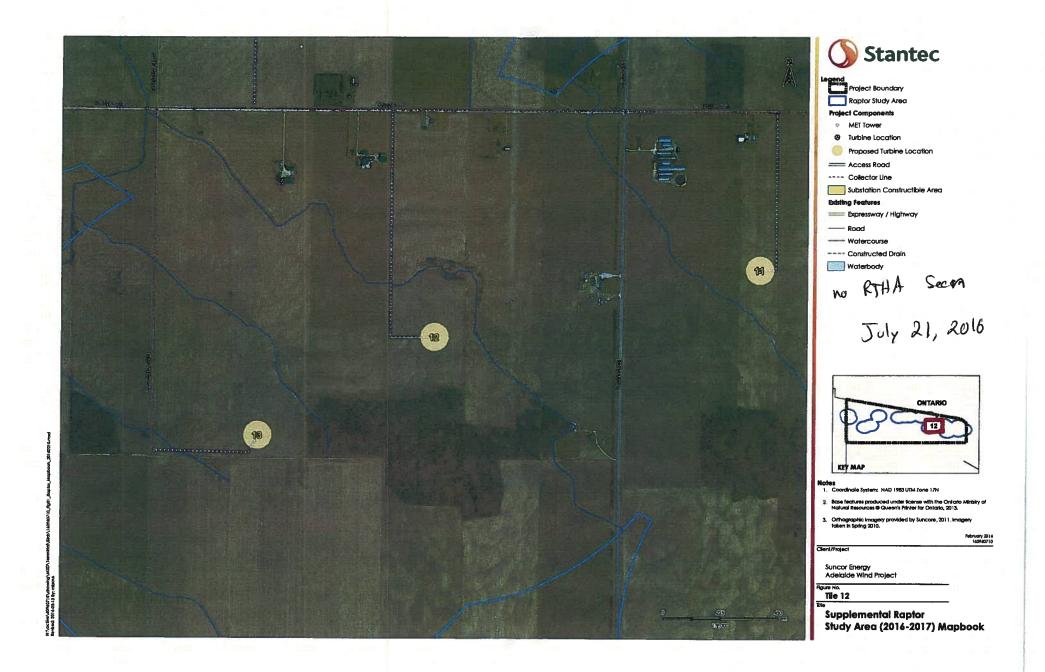
Time	(50		ehavio inition	ur Is bela	ow)	Height* (m)	Habitat Unit #		
	1	2	3	4	5		(from table above)	Notes	
7:51am	¥	st	art	0	Ę.	Mon, Jorina	*		
9:51am	¥	enc		of	mor	iturny '	no R	THA Seen X	
	$\square$					1''	/	1 1 1	
							/		
/			_		-				
			/			1	/		
* Height of blade sweep varies from project to project; check with project manager.									
1 - Thermal Soaring (kittling): Soaring in a circle within a thermal, without windheats									
<ul> <li>2 – Flapping: Flight powered by wingbeats</li> <li>3 – Gliding: Flight in straight line without wingbeats</li> <li>4 – Hovering: Hovering with or without wingbeats</li> </ul>									

5 - Perched: Perching

Pg. ____ of ___

(Field Bersonnel) Signature:

Quality Control: This form is complete & legible 0 Signature: aus (Project Manager) REV: 2011-05-06 / FORM 036-a



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:         160960067           Date:         July 29/16           TEMP (°C):           WIND:           Weather Conditions:         20 - 25         1	Project Name: Adebude Field Personnel: Melisse Straus. CLOUD: PPT: PPT (in last 24 hrs): SO
Station #: Turbine 12 Start Time: 08:05 Raptor Species: RTHA - Nest Raptor #: 1	UTM: 17 T 447865 · 476334 End Time: 10:05. If in kettle, indicate size: NOME Age: (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
) _	Cut wheat 1-	2 Crop
2	Woodlot	FOD where nest is /was (no longe
		Visible)
		-

# Provide a line entry for each change in behavior or habitat.

1

•	T: 0	(Se		ehavio Inition	our ns belo	w)	Height*	Habitat Unit #	
nciden	2	1	2	3	4	5	(m)	(from table above)	Notes
úvi	945	$\checkmark$					@ turbire.	1.2	moving east (Pleft) came back
EUVUR	955	V					Oturbin	2	Continued to circle (Same as & TT, Win
INLY 3	1005	$\checkmark$				* alto i anti a sel ta secto a s	@+	2	Continued to circle (same as & Thelip I more Thus joined (3150) 945
						<b>1</b>			
	* Height of blad 1 – Thermal Sc 2 – Flapping: 1 3 – Gilding: Fl 4 – Hovering: 5 – Perched: F Pg of Signatur	Flight p ight in Hoveri Perchin	(Kittlin owere straigh ng with	ig): So d by w it line v	oaring vingbea without thout w	in a ci its wingb ingbe W	roject; check with rcle within a then eats ats	mal, without win	er. gbeats Jality Control: This form is complete & & legible &. Signature: (Project Manager)

ADELAIDE WIND POWER PROJECT: YEAR 2 POST-CONSTRUCTION WILDLIFE MONITORING REPORT (2016)

# APPENDIX H: NOTIFICATION





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,

Form Name:

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.

Notice of Possession

Any questions related to this registration and/or the Natural Resources Registry should be directed to:



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:



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:



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,

Form Name:

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:



Form Name:Notice of PossessionDate Registration Filed:09/29/2016Confirmation ID:M-101-9151424359Version Number:002Update 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: