

# Bluff Point Wind Farm and Studland Bay Wind Farm Annual Environmental Review 2023

31 March 2024



# Contents

<b>1. General Manager’s Statement</b>	<b>3</b>
<b>2. This report</b>	<b>4</b>
<b>3. Introduction</b>	<b>5</b>
3.1 Background	5
3.2 Buff Point Wind Farm and Studland Bay Wind Farm Overview	5
3.3 Environmental Management Plans	9
<b>4. General Environmental Management</b>	<b>11</b>
4.1 Public Complaints	11
4.2 Environmental Procedure or Process Changes	11
4.3 Waste Produced	11
4.4 Non-Trivial Environmental Incidents and Non-compliances	11
4.4.1 Environmental Incidents	11
4.4.2 Incident follow-up, mitigation and preventative measures	12
4.4.3 Non-compliance	12
4.4.4 Other incidents	12
4.5 Breaches of Limits	12
4.6 Community Consultation and Communication and Other Relevant Meetings	12
<b>5. Environmental Management Plans</b>	<b>15</b>
5.1 General Management	15
5.1.1 Reporting of bird and bat collisions	15
5.2 Orange-bellied Parrot Management	15
5.2.1 Vegetation management - on site program	15
5.2.2 OBP Habitat Plot	20
5.2.3 Orange bellied Parrot rehabilitation and offsets	20
5.2.4 Orange-bellied Parrot Turbine Shutdown Contingency	20
5.3 Eagle Management	21
5.3.1 Monitoring of eagle collision with wind turbines	21
5.3.2 Minimising food resources on site	21
5.3.3 Rehabilitation of injured eagles	21
5.3.4 Understanding the factors involved in eagle collision risk	21
5.3.5 Annual appraisal of technologies 2023	22
<b>6. Commonwealth EMPs</b>	<b>23</b>
6.1 Commonwealth Bird and Bat Monitoring Plan	23
6.2 Commonwealth Vegetation Management Plan	23
6.3 Woolnorth to Smithton Transmission Line	23
<b>7. Other Environmental Actions</b>	<b>24</b>
7.1 Supporting the Tasmanian Threatened Eagle Reference Group	24
7.2 Environmental Management System	24
7.3 Annual Audit Reports	24
7.4 Emergency Preparedness	25
<b>8. Glossary</b>	<b>26</b>

# 1. General Manager's Statement

This is the 21st Annual Environmental Review (AER) published for the Bluff Point Wind Farm (BPWF) and the Studland Bay Wind Farm (SBWF) projects. The AER has been prepared according to Condition G5 of the Environment Protection Notices under which the projects are regulated (BPWF EPN no. 7421/2 and SBWF EPN no. 7423/3). According to G5, an Annual Environmental Review, that is publicly available ([www.woolnorthwind.com.au](http://www.woolnorthwind.com.au)), must be submitted to the Director of the Environment Protection Authority (EPA) by the 31<sup>st</sup> of March of each calendar year, for the reporting period (calendar year). This AER reporting period is January 1, 2023 to December 31 2023.

The information contained in this AER has been carefully prepared by our environmental team, in collaboration with project staff.

I acknowledge and endorse this report.



**Giles Rinkes**  
**Acting General Manager**  
**Woolnorth Renewables**

## 2. This report

This AER covers the period 1 January – 31 December 2023 and is provided to fulfil condition G5 of the BPWF and SBWF Environment Protection Notices (BPWF EPN no. 7421/2 and SBWF EPN no. 7423/3). It also contains information relevant to the conditions of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC) Approval (no.) 2000/12. Additionally, this report provides a summary of additional work undertaken at these sites to address any environmental issues and/or to improve environmental management of the sites. Table 1 contains details of the sections within this report and the specific purpose of each section.

**Table 1. Sections contained within this report and details of reporting requirements met.**

Sections of this report	Compliance details
1.1 <b>General Manager’s Statement</b>	Requirement of G5 (1.1) of Environment Protection Notices (EPNs) No. 7421/2 (Woolnorth Bluff Point Wind Farm) and No. 7423/3 (Woolnorth Studland Bay Wind Farm).  <b>G5 requirements: 1.1</b>
<b>Introduction</b> 3.1 Background 3.2 BPWF & SBWF 3.3 Environmental Management Plans	General information
<b>General Environmental Management</b> 4.1 Public complaints 4.2 Environmental procedure or process changes 4.3 Summary of waste 4.4 Nontrivial Environmental incidents & non compliances 4.5 Breaches of specific limits 4.6 Summary of community consultation and communication	Reporting on commitments contained within Environment Protection Notices (EPNs) No. 7421/2 (Woolnorth Bluff Point Wind Farm) and No. 7423/3 (Woolnorth Studland Bay Wind Farm)  <b>G5 requirements: 1.2, 1.3, 1.4, 1.5, 1.7, 1.10</b>
<b>Environmental Management Plans (EMPs)</b> 5.1 General Management 5.2 Orange –bellied Parrot Management 5.3 Eagle Management Plan 5.4 Commonwealth EMPs	Reporting on commitments contained within EPNs, EPBC Approval and: <ul style="list-style-type: none"> <li>○ Bluff Point Wind Farm State Environmental Management Plan</li> <li>○ Studland Bay Wind Farm State Environmental Management Plan</li> <li>○ Tasmanian Wedge-tailed Eagle and White-bellied Sea-Eagle Nesting Habitat Management Plan</li> <li>○ Transmission line EMPs</li> </ul> <b>G5 requirements: 1.6, 1.9</b>
<b>Other Environmental Actions/issues</b> 6.1 Eagle Recovery Plan 6.2 Environmental Management System 6.3 Annual audits 6.4 Emergency preparedness	General Information  <b>G5 requirements: 1.8</b>
<b>Glossary</b>	

## 3. Introduction

### 3.1 Background

The BPWF and SBWF are located in far north-west Tasmania. The wind farms are owned by Woolnorth Wind Farm Holding Pty Ltd (trading as Woolnorth Renewables (WNR)), a joint venture between Shenhua Clean Energy Holdings (75%) and Hydro Tasmania (25%). WNR manage and operate the wind farms and associated transmission lines, including compliance with obligations of EPNs and other approval conditions (EPBC, Local Government). The environmental regulatory compliance obligations of BPWF and SBWF are the focus of this report.

### 3.2 Buff Point Wind Farm and Studland Bay Wind Farm Overview

The BPWF and SBWF consist of wind turbines placed on towers at a suitable height to generate electricity, underground cables between turbines, an electrical substation, control room and ancillary buildings (central to the turbine areas), roads, fences and other associated infrastructure. The wind farms connect to the electricity grid via a 110kV transmission line (approximately 50 km in length) to the Smithton substation.

BPWF was developed in two stages. The first stage comprised the construction of six turbines, with an electrical connection to the Smithton substation via a 22kV power line. Stage 2 comprised an additional 31, 1.75MW turbines, and the construction of the 110kV transmission line from the wind farm switchyard to the Smithton substation. In total, BPWF comprised 37 Vestas V66, 1.75MW turbines and was fully commissioned in August 2004 with a generation capacity of 64.75MW<sup>1</sup>. Refer to Figure 1 for the layout of BPWF.

Construction commenced on SBWF in 2006 with a nominal capacity of 75MW. The development of SBWF included construction of a spur transmission line to connect to the existing 110kV transmission line between BPWF and the substation at Smithton. SBWF consists of 25 Vestas V90, 3MW turbines and was fully commissioned by 1 June 2007. Figure 2 details the layout of SBWF, while the transmission line route is shown in Figure 3.

BPWF and SBWF operate under joint Planning Scheme Permits (PA10/00, 176/00) and separate EPNs (replacing the original conditions attached to PA 10/00 & 176/00). The Circular Head Council issued the Planning Scheme Permits while the EPNs were issued by the Tasmanian Environment Protection Authority (EPA). BPWF and SBWF also operate under an Approval issued by the Australian Government Department of the Environment and Heritage (now the Department of Climate Change, Energy, the Environment and Water (DCCEEW) under the *Environment Protection and Biodiversity Conservation Act 1999*.

Attached to these legal instruments are environmental conditions with which the wind farms must comply. The preparation of this AER is a requirement of each wind farms' EPN. Environmental Management Plans, approved in accordance with the EPNs and Approval conditions, also outline reporting commitments and requirements. This report contains the relevant reporting requirements for the BPWF, SBWF and the associated 110 kV Transmission Line (including the SBWF 'spur line').

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<sup>1</sup> In October 2023, a wind turbine was destroyed by an internal fire, requiring the wind turbine to be decommissioned. There are now 36 wind turbines at BPWF.



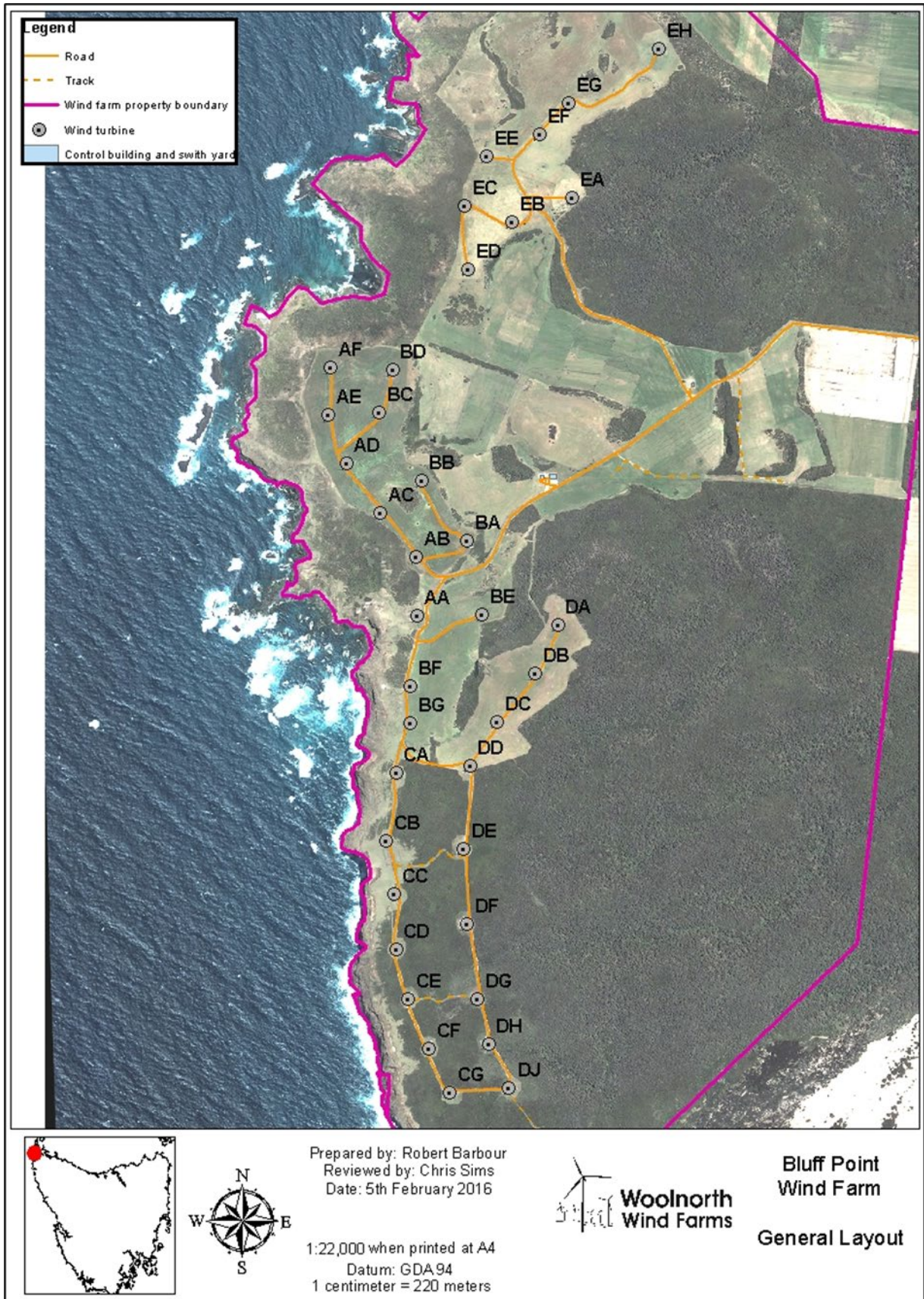


Figure 1. Original layout of Bluff Point Wind Farm<sup>1</sup>



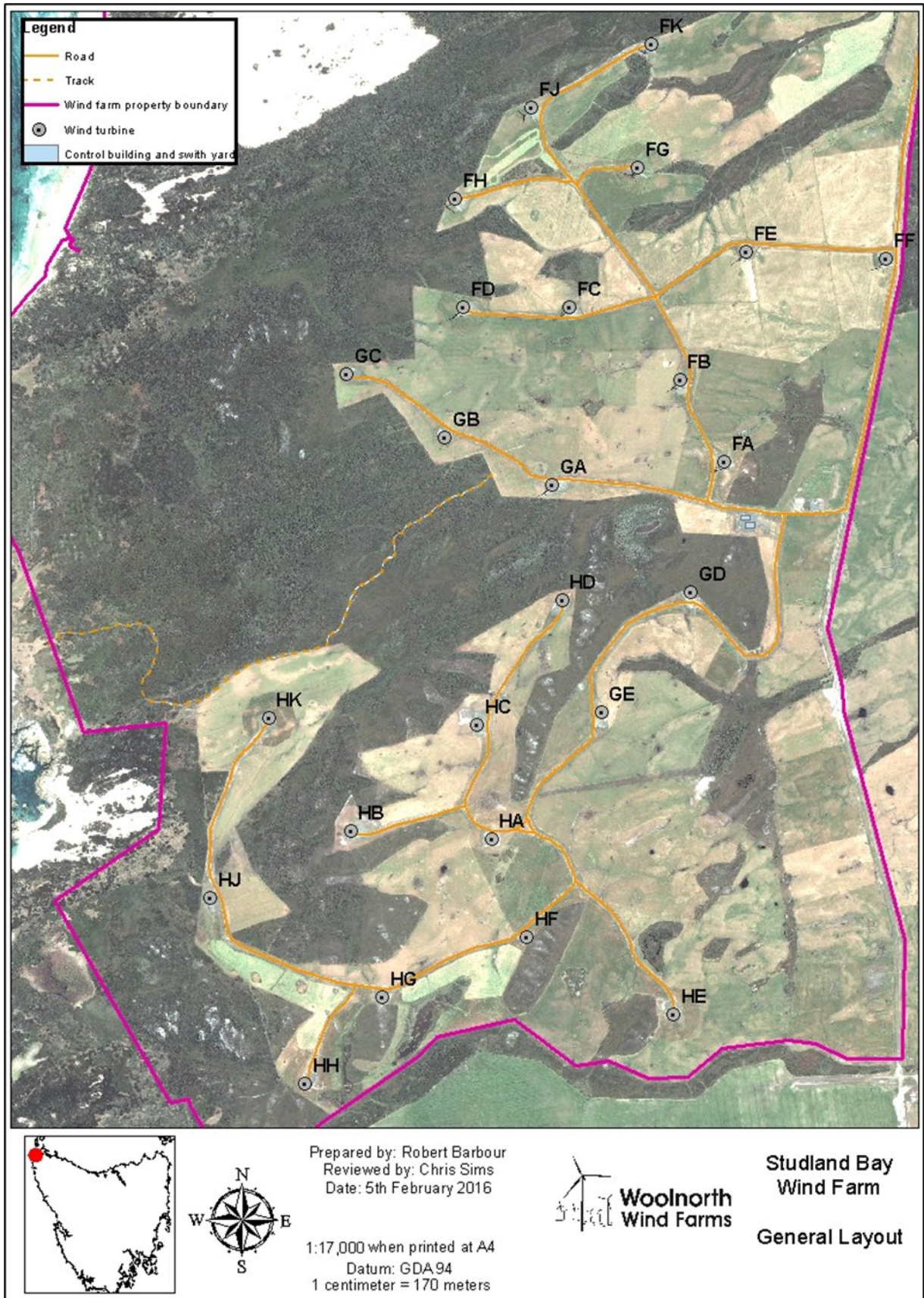


Figure 2. Studland Bay Wind Farm



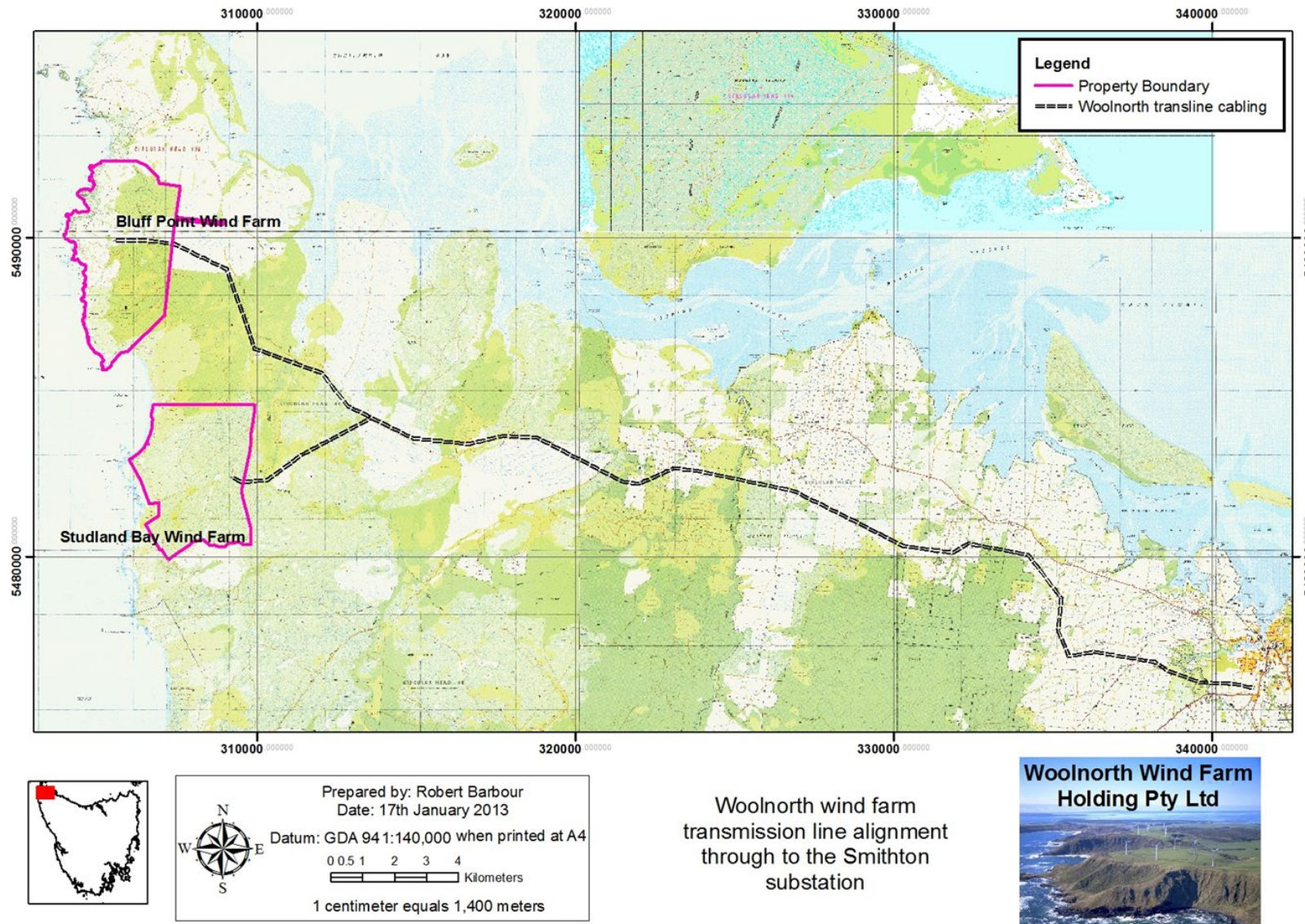


Figure 3. Transmission line alignment



### 3.3 Environmental Management Plans

As reported in previous AERs, in December 2015, the BPWF and SBWF State EMPs were reviewed. The EMPs were re-approved by the EPA in March 2016 and again in March 2022. The EMPs were restructured and presented under three separate headings:

1. General management
2. Orange-bellied Parrot Management
3. Eagle management.

This AER presents the results of relevant actions under the currently approved EMPs, and this information is collated and presented in Section 5 of this report.

All necessary Environmental Management Plans (EMPs) for BPWF and SBWF were prepared and approved as required by the approval conditions, permit and/or EPNs. The following tables (Tables 2 and 3) summarise the currently relevant management plans and their details (the current Departmental names are used).

**Table 2. Status of EMPs for BPWF and SBWF.**

<b>Environmental Management Plan</b>	<b>Approved by</b>	<b>Last approved</b>	<b>Status</b>
Vegetation Management Plan	DCCEEW*	2006	Active, few relevant actions
Bird and Bat Monitoring Plan	DCCEEW*	2005	Active, few relevant actions
Bluff Point Wind Farm Environmental Management Plan	EPA	2022	Active
Studland Bay Wind Farm Environmental Management Plan	EPA	2022	Active
Tasmanian Wedge-tailed Eagle and White-bellied Sea-Eagle Nesting Habitat Management Plan	DCCEEW*	2007	Active, but all actions completed
Orange-bellied Parrot Winter Habitat Management Plan	DCCEEW*	2005	Active, but all actions completed

\*various previous Department names.

In addition, the following plans and reports were prepared and approved prior to commencement of construction of the Woolnorth to Smithton transmission line (Table 3).

**Table 3. Status of EMPs for the 110kV Transmission Line**

<b>Environmental Management Plan</b>	<b>Approved by</b>	<b>Last approved</b>	<b>Status</b>
Transmission Line Bird Strike Mitigation Plan	EPA	2003	Inactive
	DCCEEW *	2003	Active, few relevant actions
Transmission Line Vegetation Management Plan	EPA	2003	Inactive, few relevant actions
Transmission Line Vegetation Management to Deter the Orange-bellied Parrot	EPA	2003	Inactive
	DCCEEW *	2003	Active, few relevant actions
Transmission Line Bird Strike Monitoring Plan	DCCEEW *	2003	Active
	EPA	2003	Inactive, few relevant actions

\*various previous Department names.

## 4. General Environmental Management

### 4.1 Public Complaints

There were no public complaints (in relation to environmental or other matters) received by WNR during the 2023 reporting period.

### 4.2 Environmental Procedure or Process Changes

During the 2023 reporting period there were no significant procedural or process changes relating specifically to the environmental regulation or management of the sites.

A noteworthy change to the infrastructure was seen at SBWF was the replacement of main 22-110kV transformer. Corrosive sulphur was identified as a major concern (oil contaminant) and it was considered necessary to replace it. There are no environmental or operational consequences of this work.

### 4.3 Waste Produced

During the 2023 reporting period, the following waste data was collected (Table 4).

**Table 4. Waste streams and quantities documented in 2023.**

	General waste (m <sup>3</sup> )	Liquid hydrocarbon (L)	Recycling wastes (m <sup>3</sup> )	Metal recycling (t)
BPWF	108	combined	5	combined
SBWF	54	combined	5	combined
Total	162	27,000	10	56.7

Waste streams and volumes are regularly monitored and where possible materials are recycled rather than being disposed of as general waste. Waste volumes were slightly higher than previous reporting periods, with hydrocarbons particularly high due to the switchyard transformer replacement at SBWF. A licenced contractor disposes of all waste, including waste classified as hazardous.

### 4.4 Non-Trivial Environmental Incidents and Non-compliances

#### 4.4.1 Environmental Incidents

It is a requirement that all reportable incidents are reported to the EPA and sections of Tasmanian Department of Natural Resources and Environment (NRE). This requirement is outlined in the EPNs and the reporting procedure prescribed in the BPWF and SBWF EPNs and the State EMPs. Bird and bat related incidents are reported in Section 5 of this report.

There were no reportable environmental incidents at BPWF and SBWF during the 2023 reporting period.



Other non-reportable/trivial incidents were documented and managed by WNR through internal procedures.

#### **4.4.2 Incident follow-up, mitigation and preventative measures**

As there were no reportable/non-trivial environmental incidents, there are no follow up, mitigation or preventative measures to report.

#### **4.4.3 Non-compliance**

WNR continued to comply with the latest approved State EMPs and Commonwealth Approved EMPS where relevant.

There were no non-compliances with the EPN or other approval conditions identified. Internal audits conducted as a part of the WNR internal audit schedule found no EPN or other approval condition related non-compliances. An external audit, against ISO 14001, was conducted in December 2023 and no non-conformance were identified. See section 7.

#### **4.4.4 Other incidents**

On Sunday the 1<sup>st</sup> of October a turbine fire incident occurred at BPWF (WTG EB), which led to the complete loss of the nacelle. The incident was attended by Tas Fire Service however due to the turbine being within a paddock there was little intervention required. The site was secured with a large exclusion zone, due to the potential for falling debris. To date, the clean-up has involved removal of fallen pieces of material as controlled waste (<1T) through a licensed contractor (Veolia) and the lowering of the nacelle and blades to the ground. Discussions are currently being had with Veolia to run the first blade recycling trial in Australia. This should take place through 2024. The nacelle and tower sections will be salvaged and recycled, with only a small amount of waste expected from this process.

### **4.5 Breaches of Limits**

There were no breaches of limits specified in the EPNs or any of the regulatory approved EMPs.

### **4.6 Community Consultation and Communication and Other Relevant Meetings**

A summary of community and stakeholder consultation and communication for the reporting period is provided in Table 5.

**Table 5. A summary of community and stakeholder consultation, communication and other relevant activities / meetings for the reporting period 2023**

Date	Activity or meeting	Comment
<b>Activities undertaken and outlined in the approved EMPs are outlined in the relevant sections of this report. Other management activities and meetings held in conjunction or addition to the approved EMPs are listed in this table.</b>		
Regularly throughout the year	Visitor tours of BPWF/SBWF by Woolnorth Tours	Woolnorth Tours ( <a href="http://www.woolnorthtours.com.au">www.woolnorthtours.com.au</a> ) conducts tours of the BPWF. In 2023, approximately 2500 members of the public visited the sites.
Regularly throughout the year	Audits and emergency preparedness sessions	Various audits and training sessions conducted throughout the year in accordance with WNR's internal schedules.
Regularly throughout the year	Discussions with Van Dairy	Discussions with Van Dairy were conducted regularly throughout the year to discuss and action a range of topics.
Throughout the year	Funding of various community events/groups	UTAS Springboard (Smithton), Circular Head Show, Smithton Saints Basketball Club, Twilight on the Duck, Ten Days on the Island, Circular Head Arts Festival
Throughout the year	Circular Head Roadkill Mitigation Forum	A series of meetings throughout the year, chaired by Cradle Coast Authority. Collaborating on managing the Woolnorth Rd (and other regional roads) devil roadkill issue.
Throughout the year	Devil trapping	NRE devil team
January	TMAG Expedition reconnoiter	Pre-trip visit by organisers to plan expedition
February	TMAG Expedition	Weeklong expedition by TMAG aligned scientists from a range of disciplines
March	Site visit by EPA	EPA Officer site familiarisation and inspection
April	EPA meeting	Henty House – general catchup
May	EPA meeting	Henty House – discussion on EPN review
June	Meeting with Tasmanian Museum and Art Gallery (TMAG)	Discuss financial support of Threatened Birds project
July	EPA and Circular Head Council Meeting to future development discussions	Early conversations regarding decommissioning and construction approval of future wind farm developments on the Woolnorth properties

Date	Activity or meeting	Comment
August	EPA transmission line & wind farm tour	Familiarity tour to support early discussions on regulatory approaches to the redevelopment of the Woolnorth wind farms
August	Walk on Country	Visit to Calm Bay Reserve with Circular Head Aboriginal Corporation
September	Walk on Country	Visit to Preminghana with local aboriginal rangers for tour of area
November	EPA meeting	Henty House – general catchup
December	External Audit	External audit by BSI for ISO 14001 certification
December	Woolnorth Wind Farm Springboard to Higher Education Bursary presentation.	Present University of Tasmania Woolnorth Wind Farm Springboard to Higher Education Bursary at Smithton High School and Circular Head Christian School



## 5. Environmental Management Plans

### 5.1 General Management

#### 5.1.1 Reporting of bird and bat collisions

Section 3.1 of the State EMPs for BPWF and SBWF respectively detail the reporting requirements for birds and bat mortalities listed or not listed under the *Threatened Species Protection Act 1995* (TSPA).

No dead or injured birds or bats were recorded through the reporting period.

### 5.2 Orange-bellied Parrot Management

#### 5.2.1 Vegetation management - on site program

Both wind farm sites were inspected for the presence of Orange-bellied Parrot (OBP) foraging weeds. Specifically, these weeds are:

- Wireweed
- Fathen
- Nettle-leaved Goosefoot
- Water buttons
- Chickweed.

The inspections focus on identifying the presence of the above weed species with spraying (or other actions) undertaken where necessary to remove them. Other weed species, if relevant, are identified and noted during the surveys. The specific methods used to conduct the surveys were modified as outlined in section 4.1. The revised EMPs describe a general site assessment for OBPS weeds during other routine work. However, as the approval of the EMPs was not officially received until mid-March, a normal survey was conducted as follows.

#### Methods

Prior to the OBP northward migration, a verification survey was conducted at BPWF and SBWF to assess if there were any areas that may attract OBPs. The survey was conducted over several days in February. The areas assessed were:

1. Turbine areas;
2. Roads and hardstands areas; and
3. General pastures.

The objective of the survey is to confirm that the average ground cover of known OBP foraging species (listed above) either flowering or producing seed, does not exceed an average of 10% across the total site, and that no localised area (close to a wind turbine) exceeds 30%. A staged design is used, which involves:

#### 1. Turbine selection

Six turbines are chosen at random across the site.

## **2. Turbine surveys – PASS/FAIL triggers**

- At each turbine (out to 50m from the turbine base), seven 1m x 1m quadrats are randomly selected, and the species contained in each quadrat estimated;
- If the combined average of OBP foraging species (listed above) of these quadrats is less than 20%, the turbine zone is deemed a PASS;
- If the combined average of OBP foraging species (listed above) of these quadrats is greater than 20%, another seven quadrats are randomly selected, and the average of all 14 taken; and
- If the new average is above 22%, the turbine zone is a FAIL and requires treatment/management actions and another turbine is selected at random to be tested.

## **3. Site wide calculations – PASS/FAIL triggers**

- If the combined average of all PASS quadrats is less than 7.0%, then the site is a PASS;
- If the combined average of all PASS quadrats is greater than 7.0%, then another two turbines are selected (and the turbine survey methodology described above applied); and
- Following the additional two turbine surveys, the combined average of all PASS quadrats must be less than 7.5%. Greater than this indicates a FAIL for the site and a thorough inspection of all cleared areas within close proximity of turbines is undertaken to identify areas that require treatment/management actions.

A PASS indicates a less than 5% likelihood of the site having a genuine average greater than the trigger level. A FAIL indicates that there is a greater than 5% likelihood that the plant coverage may in fact be greater than the trigger level.

### **Roads and Hardstands**

Roads and hardstands have previously been identified as areas where OBP species can commonly be present. The random quadrat surveys at each turbine (described above) sample road and hardstand areas. Outside of these, all roads within 200m of any turbine and all hardstands are inspected for the presence of known OBP food species (see list above) and treatment/management actions are undertaken where necessary.

### **General pastures**

No OBPs have been recorded foraging at the BPWF or SBWF sites since the development began studies in 2000. Grazing management, fertiliser regimes and pasture species composition are managed by the Van Dairy and assessed on an as needs basis. The random quadrat surveys at turbines (described above) sample general pastures across the site (according to the turbines selected) and management intervention is undertaken when triggers are exceeded (described above).

## **Results**

### **BPWF**

In January 2023, turbines AB, AF, BA, BG, BF and EF were randomly selected (using Random function in Excel).

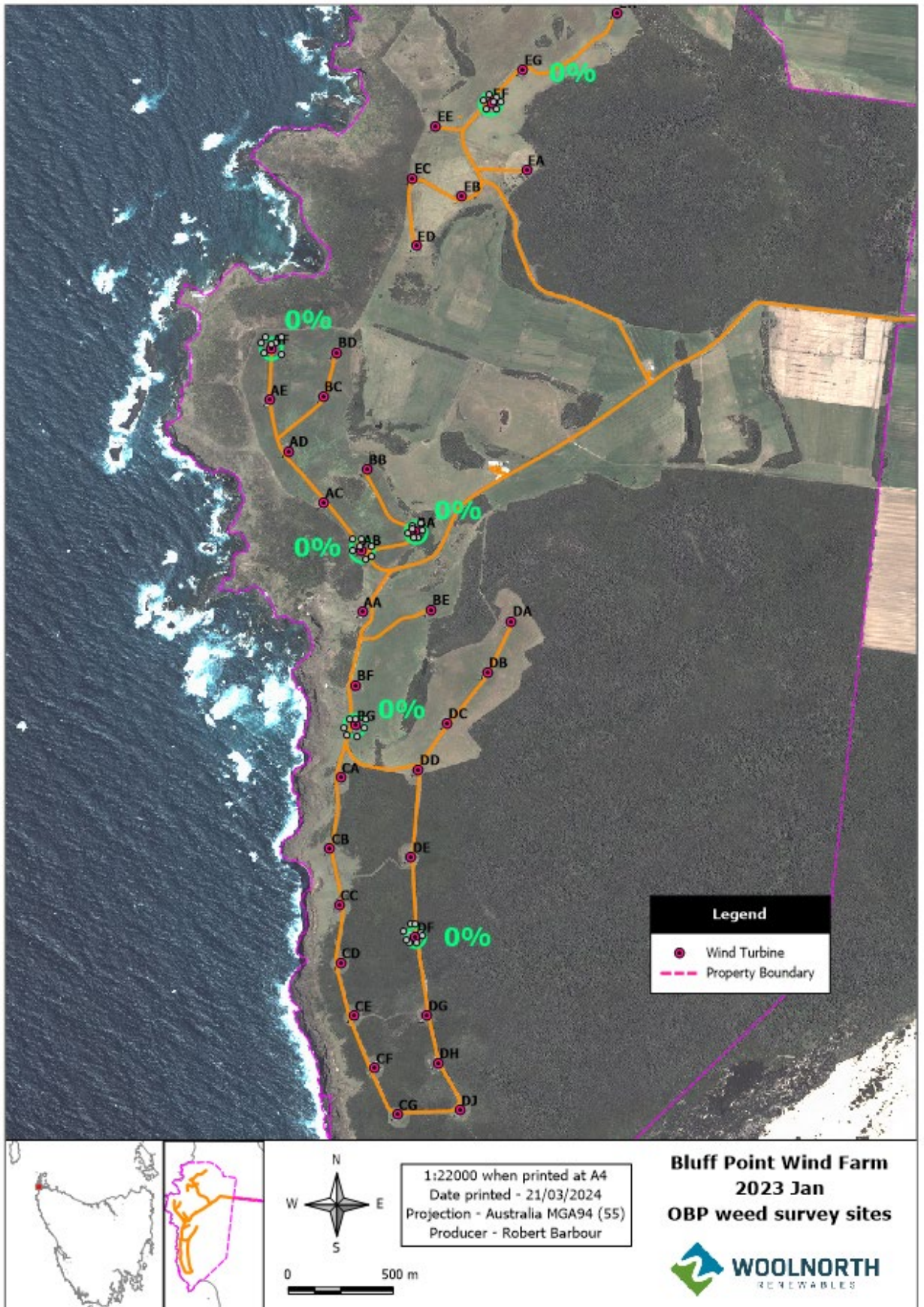


Figure 4. BPWF weed survey locations and combined average results (%) of OBP foraging species.



Figure 4 (above) outlines the combined average of OBP foraging species at each sampled turbine site. All wind turbine areas were deemed a 'PASS'. Based on the wind turbine area results, the site was also deemed a 'PASS'.

During the surveys there were no OBP weed species found in open pastures indicating the surveys and any control undertaken by Van Dairy during 2023 was effective. Roads and hardstands were assessed during the formal quadrat surveys and no OBP weed species were identified.

The site was therefore considered free of the key OBP attracting weed species.

During the last quarter of 2023 all roads and hardstands across the site were sprayed with herbicide for maintenance purposes. The herbicide application will assist in preventing the establishment of OBP weed species in these areas.

### **SBWF**

In January 2023, turbines FA, FG, GA, HA, HC and HE were randomly selected (using Random function in Excel).

Figure 5 (page 18) outlines the combined average of OBP foraging species at each sampled turbine site. As can be seen from the results none of the five OBP weed species were identified in any of the surveyed wind turbine areas and hence all wind turbine areas were deemed a 'PASS'.

During surveys across the balance of the property, two isolated populations of Nettle-leaved Goosefoot were identified in paddock drains adjacent to site access roads. These areas were considered too small to warrant management intervention. Generally, however, any control works undertaken by Van Dairy during 2023 was considered effective. Roads and hardstands were assessed during the formal quadrat surveys and no OBP weed species were identified.

The site was therefore considered free of the key OBP attracting weed species.

During the last quarter of 2023 all roads and hardstands across the site were sprayed with herbicide for maintenance purposes. The herbicide application will assist in preventing the establishment of OBP weed species in these areas.

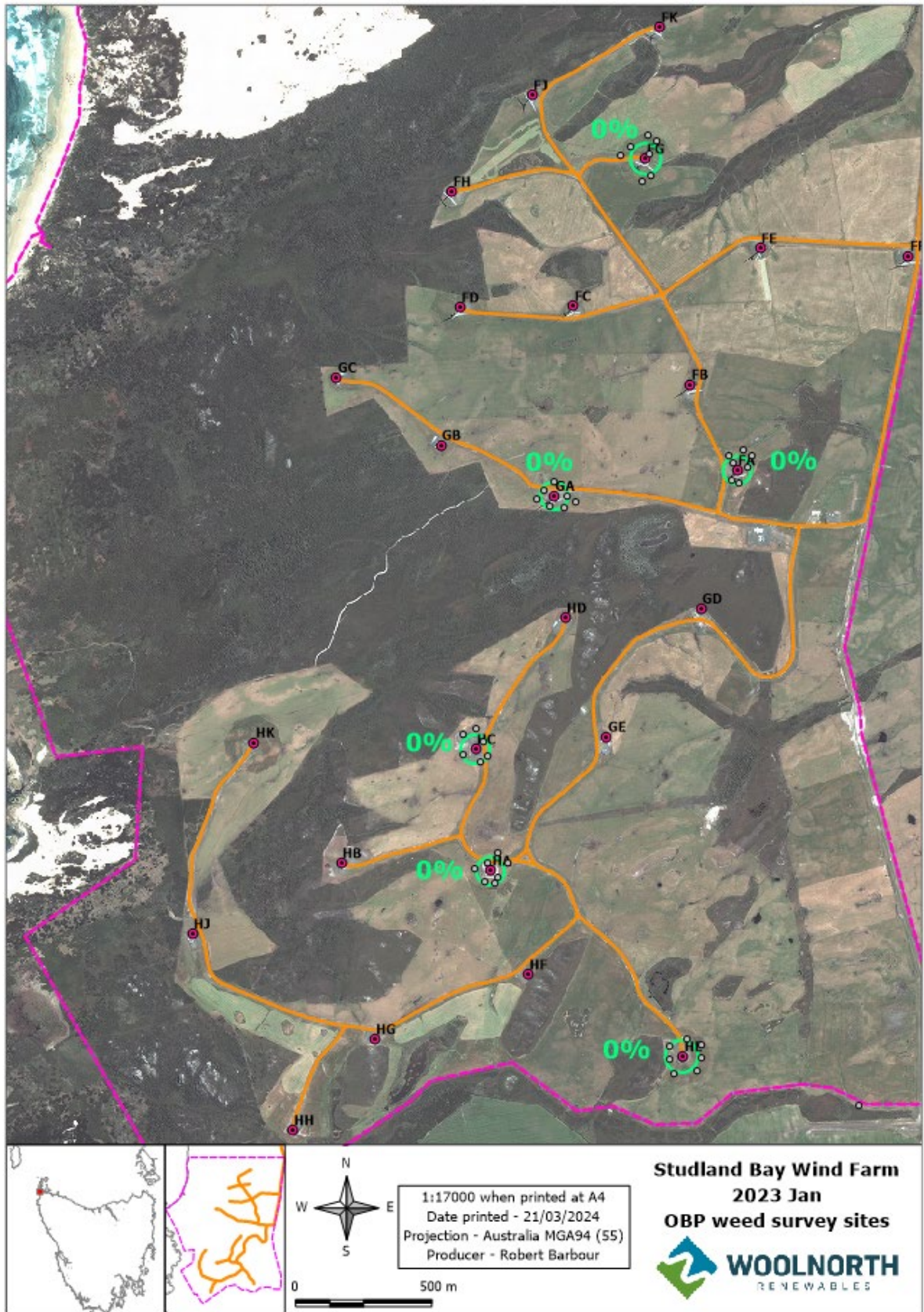


Figure 5. SBWF weed survey locations and combined average results (%) of OBP foraging species.



### 5.2.2 OBP Habitat Plot

The OBP habitat plot, established in 2008/09, was inspected bi-annually between 2009 and 2021. As detailed in the EMP, the OBP habitat plot is well established (see Figure 6 from 2021) and securely fenced and therefore the bi-annual inspections of the plot have been removed from the latest approved EMP.



Figure 6. The OBP roost plot, from south-east.

### 5.2.3 Orange bellied Parrot rehabilitation and offsets

No OBPs were found dead or injured (at either site) and hence no rehabilitation or offsets were required.

### 5.2.4 Orange-bellied Parrot Turbine Shutdown Contingency

No OBPs, or flocks of Blue-winged Parrots (indicators of OBPs), were observed at either BPWF or SBWF during 2023 that required the shut-down triggers developed to be implemented. Therefore, no management actions (as specified in the State EMPs) were undertaken.

In April 2023, the annual briefing of all site staff was undertaken to ensure the OBP shutdown protocol (as set out in the EMPs) is understood.



## **5.3 Eagle Management**

### **5.3.1 Monitoring of eagle collision with wind turbines**

An updated monitoring strategy was approved by the EPA in December 2013 and by the DCCEE in June 2014. This monitoring strategy remains focussed on monitoring BPWF and SBWF for eagle collisions. The strategy relies on ad-hoc monitoring and surveillance by site personnel. A series of benchmarks have been developed based on the calculated long-term collision rate (for each site) and if reached, trigger an escalating response. All responses have the objective of investigating the detected eagle mortalities (to understand or determine the root cause/s) and to determine if there has been a change (increase) in the average annual collision rate.

#### **Methods**

Monitoring is conducted by all personnel that are working on the sites. This includes WNR, Van Dairy and any consultants employed to work on the sites. The requirement to report any dead or injured eagles (or other birds and bats) to WNR, or their representative, is managed and reinforced through the general and site induction processes.

#### **Results**

There were no dead or injured eagles detected during the reporting period at either BPWF or SBWF and therefore no management actions were required.

### **5.3.2 Minimising food resources on site**

WNR continued to minimise potential eagle food resources on site by preventing any calving on the land and by removing any dead cattle or other animals from turbine areas. This has been achieved by regular monitoring of stocked areas by farm staff. No sheep are grazed on the wind farm sites. In addition, a prey control program is implemented when there is a significant or unusual density of WTE or WBSE prey species (wallabies and pademelon) observed/identified on site. A prey control program was not deemed necessary and therefore not implemented.

### **5.3.3 Rehabilitation of injured eagles**

There were no eagle collisions or injured eagles observed at either site during 2023, and therefore no eagles were rehabilitated during the reporting period.

### **5.3.4 Understanding the factors involved in eagle collision risk**

WNR is committed to monitoring possible technologies and methods to improve our understanding of the factors involved in eagle collisions with wind turbines. The majority of testing and research, however, is undertaken at the Musselroe Wind farm and includes behavioural analyses, genetic testing, GPS tracking, breeding studies, camera trap analyses and the installation of Identiflightan automated curtailment system. Woolnorth had been trialing a Robin Radar system for several years, but this project was ceased during the 2023

reporting period. Woolnorth executed a contract during 2023 for the procurement and installation of the Identflight system. Information on this work can be found in the Musselroe Wind Farm Annual Environmental Report and the latest Public Environment Report. Both reports are available on the Woolnorth Renewables public website..

### **5.3.5 Annual appraisal of technologies 2023**

Despite WNR focussing efforts on the implementation of an automated curtailment system for the Musselroe Wind Farm site, the assessment of new technologies for understanding eagle collision risk, collision factors and potential mitigation options continued throughout the reporting period. This included the review of technical reports and papers, summaries of conference proceedings and workshops, review of technology provider's websites and discussions or meetings with technology suppliers.

While considerable research continues to be conducted in the area, no new technologies have been identified by WNR that are commercially available. Research and discussion continue to focus on the areas of collision detection, prevention and off-site mitigation (i.e. offsets). Several wind and wildlife meetings or conferences were held during the reporting period including multiple webinars on a broad range of topics, and the 7th Conference on Wind energy and Wildlife impacts (held in the Croatia). Both featured discussions on mitigation strategies and technologies.

The commercial technologies that offer collision prevention strategies appear to remain unchanged, these being Robin Radar, IdentiFlight and DTBird. IdentiFlight continues to gain recognition as an effective technology, both locally (from Cattle Hill Wind Farm Reporting) and in international commentary (Lang 2021, Lee 2021). It also continues to be the only technology that has results reported in peer reviewed journals (McClure et al. 2018, 2020, 2021). MUSE (multi-sensor bird detection) is an emerging technology that combines camera and radar but does not appear to offer significant benefits over IdentiFlight (for eagle collision mitigation).

During 2022, WNR had brief discussions with Goldwind as the operators of the Cattle Hill Wind Farm and the IdentiFlight system installed at that site. The report produced by Goldwind, Assessment of IdentiFlight Avian Detection System (Roger, 2022), provides a detailed appraisal of the system and performance in relation to WTE detection and collision prevention.

WNR will continue to monitor the progression of technologies, research projects and relevant literature.

It should be noted that in early 2023, Woolnorth ceased its trial of a Robin Radar system. The details of the Robin Radar trial can be found in the Musselroe Wind Farm Annual Environmental Report and the latest Public Environment Report, with both reports available on the Woolnorth Renewables public website. In mid-2023, Woolnorth commenced the procurement and installation of an IdentiFlight system. Details can be found in the above - mentioned reports.

## 6. Commonwealth EMPs

Actions that have been developed in response to the Commonwealth approval conditions are contained within the following EMPs:

- Bird and Bat Monitoring Plan (specifically bird utilisation surveys and collision monitoring of turbines)
- Vegetation Management Plan (specifically habitat management for OBPs);
- OBP Winter Habitat Management Plan
- Wedge-tailed Eagle and White-bellied Sea-eagle Nesting Habitat Management Plan (actions relating to wedge-tailed eagles)
- Transmission line EMPs.

All actions in the OBP Winter Habitat Management Plan and Tasmanian Wedge-tailed Eagle and White-bellied Sea-eagle Nesting Habitat Management Plan are completed and have been reported on in previous AERs or Public Environment Reports. Relevant EMPs are discussed below.

### 6.1 Commonwealth Bird and Bat Monitoring Plan

Approval was obtained from the Commonwealth to cease the generic bird utilisation surveys and to modify the turbine mortality searches from generic to an eagle-focus (as detailed in the 2010 Annual Environmental Performance Report). Approval was obtained in 2014 to modify the eagle mortality searches as outlined in section 5.3.1 above. Results for 2023 are provided in the same section.

### 6.2 Commonwealth Vegetation Management Plan

The actions in this plan that are relevant to the Commonwealth are those relating to habitat management of OBPs. The results of these actions are reported in Section 5.2.

### 6.3 Woolnorth to Smithton Transmission Line

Various management plans apply to the Woolnorth to Smithton 110kV transmission line. These are:

- Transmission Line Bird Strike Mitigation Plan;
- Transmission Line Vegetation Management to Deter the Orange-bellied Parrot; and
- Transmission Line Bird Strike Monitoring Plan.

Most actions contained in these plans were completed during the construction of the transmission line. The remaining actions include vegetation/weed surveys and control (if required) to deter OBPs from the transmission line corridor and surveys of the corridor for evidence of bird collisions. These actions were undertaken as required by the relevant plans. No bird collisions were identified during the 2023 reporting period.

## 7. Other Environmental Actions

### 7.1 Supporting the Tasmanian Threatened Eagle Reference Group

WNR are supporting the review of the Tasmanian Threatened Eagles Recovery Plan (2006-2010) through involvement in the Tasmanian Threatened Eagle Reference Groups Recovery Plan Review. WNR are providing input in collaboration with, and on behalf of, other companies operation or developing wind farms in Tasmania. In 2023 WNR facilitate industry feedback on the eagle listing statements.

### 7.2 Environmental Management System

WNR (including operations at BPWF and SBWF) operates its business under a Health, Safety and Environmental management system. The HSE system includes Policies, Procedures, Forms and other documents that assist to:

- Establish and set high level directives to all areas of the business.
- Document accountabilities and responsibilities.
- Effectively manage business and operational risks.
- Develop procedures and protocols to effectively control and manage operational risks and issues.
- Establish methods to check and review system performance and implementation.
- Ensure a systematic continuous improvement cycle is established and implemented.

WNR (including BPWF and SBWF) was certified to ISO 14001 in 2013 and has since retained this certification. No non-conformance was identified in the 2023 ISO 14001 audit. This was a re-certification audit.

### 7.3 Annual Audit Reports

Internal and external audits of the two wind farm sites are conducted in accordance with an audit schedule. The audit schedule is established at the commencement of each calendar year and reviewed on a regular basis to ensure the schedule is being followed. Internal audits are conducted in accordance with system procedures. All audit findings are entered into a dedicated database and audit actions tracked. Table 6 includes a summary of the audits (relevant to this report) conducted during the reporting period.

**Table 6. Summary of audits in 2023.**

Year	Audit type
2023	Environmental and compliance audit at BPWF and SBWF
2023	Operational audit at BPWF and SBWF
2023	System procedure audit
2023	External audit against ISO 14001

Audits conducted over the period continue to check environmental performance and drive continuous improvement in environmental management at both sites. All audit actions including opportunities for improvement have been evaluated and where possible actions developed to address them. Implementation of actions is tracked at various levels.



## 7.4 Emergency Preparedness

Throughout the reporting period, several emergency preparedness exercises were conducted. These were completed according to an annual plan and included both desktop and field-based scenarios. The exercises conducted (relevant to this report) are shown in the table below.

**Table 7. Emergency preparedness exercises conducted in 2023.**

<b>Activity</b>	<b>Site</b>	<b>Activity Type</b>
Injured eagle	BPWF/SBWF	Desktop
Coolant Spill and clean-up	BPWF/SBWF	Desktop
Protester incident	BPWF/SBWF	Desktop
Crane failure	BPWF/SBWF	Desktop
Helicopter incident	BPWF/SBWF	Desktop
Social media incident	BPWF/SBWF	Desktop

## 8. Glossary

AER	Annual Environmental Review
BPWF	Bluff Point Wind Farm
NRE	Department of Natural Resources and Environment
DCCEEW	Commonwealth Department of Climate Change, Energy, the Environment and Water
Eagle	WTE or WBSE
EMP	Environmental Management Plan
EPA	Tasmanian Environment Protection Authority
EPBC	Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i>
EPN	Environment Protection Notice
OBP	Orange-bellied Parrot ( <i>Neophema chrysogaster</i> )
SBWF	Studland Bay Wind Farm
TSPA	Tasmanian <i>Threatened Species Protection Act 1995</i>
WBSE	White-bellied Sea-Eagle ( <i>Haliaeetus leucogaster</i> )
WNR	Woolnorth Wind Farm Holding Pty Ltd
WTE	Wedge-tailed Eagle ( <i>Aquila audax fleayi</i> )

### Species names referred to in text.

#### Plants

Chickweed	<i>Stellaria media</i>
Fathen	<i>Chenopodium album</i>
Nettle-leaved goosefoot	<i>Chenopodium murale</i>
Water buttons	<i>Cotula coronopifolia</i>
Wireweed	<i>Polygonum aviculare</i>

#### Birds

Wedge-tailed eagle	<i>Aquila audax fleayi</i>
White-bellied sea eagle	<i>Haliaeetus leucogaster</i>
Orange-bellied parrot	<i>Neophema chrysogaster</i>

#### Mammals

Tasmanian Devil	<i>Sarcophilus harrisii</i>
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