



Jim's Plain & Robbins Island
Renewable Energy Parks

Robbins Island Renewable Energy Park

Appendix H

Eagle Nest Survey



UPC Robbins Island Pty Ltd



UPC Robbins Island Pty Ltd

Robbins Island Renewable Energy Park Approvals Eagle nest survey

December 2019

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1. Introduction

GHD conducted a search of the proposed Robbins Island Renewable Energy Park (the Project) site in north-west Tasmania for wedge-tailed eagle (*Aquila audax fleayi*) and white-bellied sea eagle (*Haliaeetus leucogaster*) nests

The Tasmanian subspecies of the wedge-tailed eagle (*Aquila audax fleayi*) is listed as endangered under both the Tasmanian *Threatened Species Protection Act 1995* and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

The Tasmanian white-bellied sea-eagle (*Haliaeetus leucogaster*) is listed as vulnerable under the Tasmanian *Threatened Species Protection Act 1995*.

The primary reason for the survey was to locate unknown eagle nest sites within one kilometre of the footprint of the Project site, as per the Project Specific Guidelines issued for the Project, by the Tasmanian Environmental Protection Authority (EPA) in January 2018.

1.1 Limitations

This report has been prepared by GHD for UPC Robbins Island Pty Ltd and may only be used and relied on by UPC Robbins Island Pty Ltd for the purpose agreed between GHD and the UPC Robbins Island Pty Ltd as set out in Section 1 of this report.

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The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer section 2 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.

2. Methodology

2.1 Eagle nesting habitat identification – pre-survey

Potential nesting habitat for wedge-tailed eagles is tall eucalypt trees in large tracts (usually more than 10 ha) of eucalypt or mixed forest. Nest trees are usually amongst the largest in a locality. They are generally in sheltered positions on leeward slopes, between the lower and mid sections of a slope and with the top of the tree usually lower than the ground level of the top of the ridge, although in some parts of the State topographic shelter is not always a significant factor (e.g. parts of the north-west and Central Highlands) (Forest Practices Authority 2015).

For white-bellied sea eagles, nests usually occur in forest within 5 km of the coast, lakes or large rivers or areas with a complex mosaic of farm dams. While this species will choose mature trees when available, this is not a critical requirement for nesting and the species will also nest on sea cliffs and rock stacks. Nest trees can be on exposed slopes and close to forest boundaries, particularly near water (Forest Practices Authority 2015).

Robbins Island has a range of different potential locations for eagle nesting, suitable for nests of both wedge-tailed eagles and white-bellied sea eagles. As such, mapping pre-survey focussed on identifying typical tall eucalypt forest with suitable characteristics across the Project area.

Previous experience indicates that areas of lower suitability nesting habitat should also be searched, due to some eagle nests occurring in atypical habitat on similar sites to Robbins Island. During the helicopter flights, the flight plan allowed flexibility to search all potential eagle habitat identified during the search and or any other potential sites based on local knowledge.

2.2 Helicopter survey methodology

On Monday 4 June 2018, a helicopter was used to survey the areas identified as potential eagle nesting habitat, for all areas within one kilometre of Robbins Island. The survey was undertaken by an appropriately qualified specialist in identification of eagle nests (Nick Mooney), accompanied by a second observer to cover both sides of the helicopter. The flights were conducted by a highly experienced helicopter pilot (Tom Osbourne – Osbourne Aviation), who has previous experience identifying eagle nest sites.

The survey was conducted in accordance with the Forest Practices Authority's *Fauna Technical Note No. 1 – Eagle nest searching, activity checking and nest management* (Forest Practices Authority 2015).

The survey covered the total area of Robbins Island, and an area on the mainland side of Robbins Passage was also surveyed, as this is the likely landing point for a proposed transmission line and bridge/causeway connecting Robbins Island to mainland Tasmania, which forms part of the Project.

The survey was conducted in three separate flights, with the first flight covering most of the eastern part of the island, the second flight covering most of the western part of the island, and the third flight covering the area on the southern side of Robbins Passage (Figure 1). Each flight was approximately 2.5 hours in duration. The weather was ideal for aerial surveying with relatively clear skies, high cloud and light winds, with excellent visibility.

The helicopter used had an in-built GPS tracking system, which was used during the survey to record track logs and navigate to the identified search areas. Additionally, handheld GPS and smartphone GPS were also used to assist in navigation and to determine nest locations. Some locations were ground-truthed after the helicopter survey, as noted in Table 1.

3. Results

The survey covered all of the potential eagle habitat identified across the site, and tracking of the areas flown during the survey are shown in Figure 1.

A number of incidental sightings of both wedge-tailed eagles and white-bellied sea eagles were made during the flights.

Two existing nests were recorded on the Natural Values Atlas, and both these nests were re-located during this survey. A further seven new nests were found during the survey. Details on the location and condition of these nests are provided in Table 1, and a map of these locations is provided in Figure 2. Incidental observation locations of eagles during the survey are provided in Figure 3.

A previously existing nest recorded on the Natural Values Atlas (nest ID 67) was not re-located during this survey. The nest was last observed in 1985 (observation 1255375), and was last confirmed absent in 2013 (observation 1383586). The nest record was located in close proximity to nests identified during the survey adjacent to Robbins Island Road, and would likely have been identified should the nest have been present during the time of the survey.

It should be noted that the species using the nests could not be determined during the helicopter survey. Table 1 notes whether field observations indicate which eagle species was the most likely to occupy each nests, but it cannot be definitively determined which species uses each nest, as this varies between years and these species compete for nests (Nick Mooney pers. comm.).

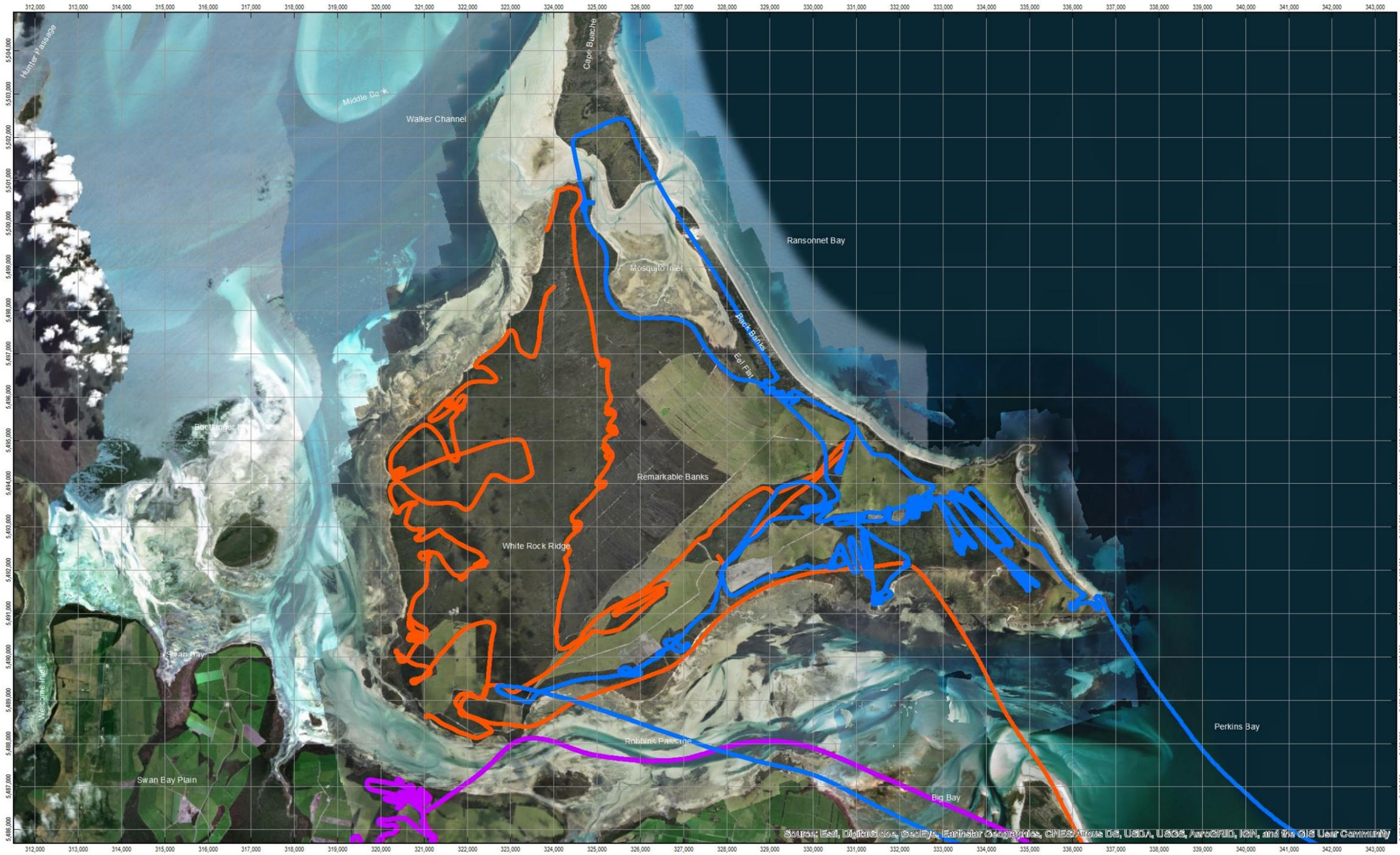
Condition assessment was based on visual inspection of each nest from the helicopter, with observations of nearby eagle activity noted to assist identification of which species is likely to use each nest.

Table 1 – Eagle nest location table

Map reference (Fig 2)	Easting	Northing	Condition	Comment
RI1	333483	5492714	4/5	Nest within live eucalypt, probably used by white-bellied sea eagle. Signs of recent use seen during survey. Adults and juveniles were seen perched nearby.
RI2	324702	5500419	3/5	Nest located on rock stack, probably used by white-bellied sea eagle. Nest had no sign of recent use.
RI3	329905	5493326	5/5	Nest within dead eucalypt around 200 m from paddock, probably used by wedge-tailed eagle. Signs of recent use seen during survey. Adult wedge-tailed eagles were seen perched within 1 km. Nest location was ground-truthed post survey, with signs of use underneath.
RI4	332161	5492126	4/5	Nest within live eucalypt, probably used by white-bellied sea eagle. Some signs of recent use seen during survey.
RI5	331390	5491368	5/5	Large nest in broken eucalypt around 70m from coastline, probably used by white-bellied sea eagle. Previously recorded in Natural Values Atlas as nest #2209. Nest had signs of recent use.

Map reference (Fig 2)	Easting	Northing	Condition	Comment
RI6	325932	5489579	5/5	Nest located in in live eucalypt, probably used by white-bellied sea eagle. Nest had signs of recent use from aerial survey. Nest location was ground-truthed post survey, with signs of use underneath.
RI7	321786	5495745	3/5	Nest located in tea tree copse, next to small lake. Nest probably used by white-bellied sea eagle. Nest had signs of recent use. Juvenile white-bellied sea eagle spotted within 1km of nest.
RI8	320955	5492879	5/5	Nest located in prominent dead eucalypt overlooking Teal Lagoon. Previously recorded in Natural Values Atlas as nest # 590. Nest had signs of recent use, with adult white-bellied sea eagles spotted nearby.
RI9	322396	5492155	4/5	Nest located in live eucalypt, probably wedge-tailed eagle. No sign of recent use from the air, but subsequent ground check showed some signs of use. Wedge-tailed eagles were sighted perching within 2km.
TL1	320430	5487051	2/5	Appears to be a very old nest. Nest located in dead eucalypt, probably white-bellied sea eagle. No sign of recent use.
TL2	320502	5487034	1/5	Appears to be a very old nest, with no signs of recent use, located in dead eucalypt. Probably used by white-bellied sea eagle.
TL3	320672	5486898	5/5	Nest located in live eucalypt. Probably used by white-bellied sea eagle. Nest had signs of recent use, with an adult sea eagle spotted flying near nest.

Figure 1- Eagle nest search flight paths



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

<p>Paper Size A3 0 500 1,000 2,000 Metres</p> <p>Map Projection: Transverse Mercator Horizontal Datum: GDA 1994 Grid: GDA 1994 MGA Zone 55</p>		<p>LEGEND</p> <ul style="list-style-type: none"> ● Helicopter flight track - Flight 1 ● Helicopter flight track - Flight 2 ● Helicopter flight track - Flight 3 			<p>UPC Robbins Island Pty Ltd Robbins Island Renewable Energy Park</p> <p>Eagle nest search flight paths</p>	<p>Job Number 32-1855801 Revision A Date 04 Oct 2018</p>	<p>Figure 1</p>
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Figure 2 – Map of eagle nest locations



Paper Size A3
0 500 1,000 2,000
Metres

Map Projection: Mercator Auxiliary Sphere
Horizontal Datum: WGS 1984
Grid: WGS 1984 Web Mercator Auxiliary Sphere

LEGEND
● Eagle nest locations

GHD UPC
Tasmania
State of Tasmania

UPC Robbins Island Pty Ltd
Robbins Island
Renewable Energy Park

Job Number 32-1855801
Revision A
Date 04 Oct 2018

**Eagle nest locations
Robbins Island**

Figure 2

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Data source: Data Custodian, Data Set Name/Title, Version/Date. Created by: mvdavis

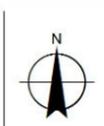
Figure 3– Map of eagle sightings during survey



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Paper Size A3
 0 500 1,000 2,000
 Metres

Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 55



LEGEND

Observations

- White-bellied sea eagle
- Wedge-tailed eagle
- Eagle nest locations



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 Renewable Energy Park

Job Number 32-1855801
 Revision A
 Date 04 Oct 2018

Eagle observations during helicopter survey

Figure 3

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 Data source: Data Custodian, Data Set Name/Title, Version/Date. Created by: mrdavis

4. Recommendations

A key consideration for management of eagle nests is that they remain undisturbed during the management constraint period (i.e. during breeding season), especially when construction activities are occurring on site. For wind farms, the potential disturbance is more permanent, as wind farms operate year-round near eagle nests, and as such, management actions need to be carefully considered. Nest desertions due to disturbance usually results in subsequent attempts to nest elsewhere in the territory, often in sub-standard sites. Thus, it is important to take steps to minimise the risk of nest desertion at all sites.

The key measure for minimising impact to eagle nests is putting buffer zones in place around existing nests to avoid disturbance to birds during breeding season, and more generally during operation of the wind farm. Each nest in a wedge-tailed eagle or white-bellied sea eagle territory is important, whether or not it is active, because nests act as territorial flags and provide birds with alternative nesting sites within their territory.

For windfarms, the previously accepted eagle nest buffer zones in Tasmania has been a one kilometre buffer around each nest for development of wind turbines and ancillary infrastructure. Utilisation surveys from other wind farm developments in Tasmania indicate that higher levels of eagle activity occur mostly within one kilometre of nest sites and that a one kilometre buffer has been used as a reasonable surrogate for reducing collision risk.

Based on previous approvals for wind farms in Tasmania, it is recommended that a one kilometre buffer zone be adopted for nests on Robbins Island. It is also recommended that data from eagle utilisation surveys for the Robbins Island site be analysed to ensure that these buffer distances are appropriate for the site. These buffers should exclude both turbines and any ancillary infrastructure (such as access roads and above-ground transmission infrastructure).

During construction, using the management actions outlined in the Forest Practices Authority's Fauna Technical Note 1 (Forest Practices Authority 2015) would help to minimise disturbance of nests for any Project related activities within the buffer zones. Additionally, if nests are disturbed temporarily, these management actions would provide the potential for eagles to re-occupy nests in subsequent years. It is recommended that the construction environmental management plan for the construction of the wind farm be developed using the above reference to determine relevant actions for eagle nest management during construction.

Due to the potential inter-annual variation in breeding of eagles, it is recommended that all known nest sites are considered 'active' during the breeding season unless otherwise confirmed by a specialist. It is recommended that nest activity be determined from further observations on site prior to construction.

5. References

Forest Practices Authority (FPA) 2015, Fauna Technical Note No. 1 – Eagle nest searching, activity checking and nest management. FPA, Version 2.9 May 2015

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