Native Vegetation Clearance Proposal

Hurst Scattered Tree Data Report

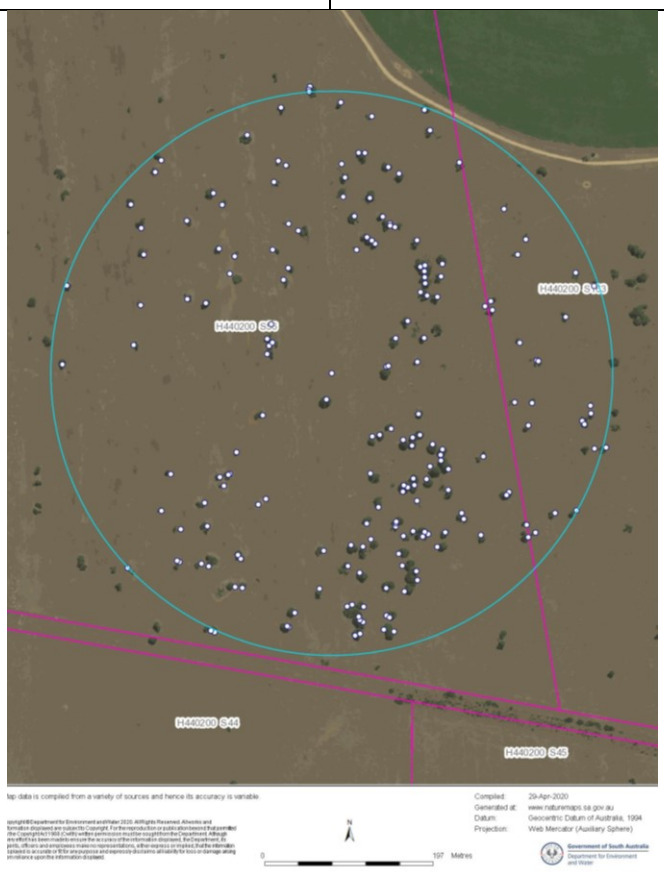
Clearance under section 28 of the *Native Vegetation Act 1991*

28 June 2020

648 Lake Hawdon Road, Bray

Prepared by Peter Tucker, Mister Tucker's Business

Application Summary: Level 4

Clearance Area/Number of Trees	212 *Melaleuca lanceolata* 4 *Allocasuarina verticillata*
Reason for clearance	To improve farm productivity
Application location	Hundred of Bray, Sections 56 and 163
	
Contravenes Principles of Clearance?	Yes - Principles (b) Seriously At Variance, and (e) At Variance
SEB Offset proposal	66.312 hectares of on-ground SEB, plus 4.12 of existing SEB credit owned by Lake Hawdon Proprietors.

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1. Application information

Applicant:	Lake Hawdon Proprietors		
Key contact:	Mr David Hurst		
Landowner: *(if the applicant is not the landowner, you must attach written permission)*			
Site address:	468 Lake Hawdon Rd, Bray5276		
Local Government Area:	District Council of Robe	Hundred:	Bray
Certificate of Title:	CT/5570/283	Section/All otment:	H440200 S56 H440200 S163
Summary of Application			
Proposed clearance area:	This clearance application is for 216 trees in a paddock currently used for grazing. The trees include 212 *Melaleuca lanceolata* (Dryland Tea Tree) and four *Allocasuarina verticillata* (Drooping Sheoak). The trees range in condition from poor to excellent. Several of the trees contain hollows.		
Purpose of the clearance:	Lake Hawdon Proprietors would like to remove the trees to install a 32-hectare pivot irrigator to grow improved pasture, Lucerne. Extensive consideration has been given to the location including availability of non-saline water, slope and exposed surface rock. The pivot irrigator is the smallest viable size for improved pasture.		
Proposed SEB offset:	Lake Hawdon Proprietors proposes to achieve the SEB requirement with 66.312 hectares of on ground SEB, plus 4.12 hectares of SEB Credit. Total of 70.432 hectares.		

2. Background

2.1 Purpose of the proposal

This proposal is to clear 211 *Melaleuca lanceolata* (Dryland Tea Tree) and five *Allocasuarina verticillata* (Drooping Sheoak) trees. The trees range in condition from very poor to excellent. The purpose of this proposed clearance is to install a 32-hectare pivot irrigator to grow improved pasture, Lucerne, for sheep and cattle. This will improve the long-term productivity of the property, providing a stronger foundation for the next generation of this family enterprise.

2.2 Background

The property was purchased by the Hurst family in 1948 and is primarily used for dry land grazing (sheep and cattle) with two pivot irrigators providing irrigated pasture for improved economic security. The property is situated in the Bray district approximately 23km the south east of Robe and lies within the District Council of Robe. Surrounding land use is a mixture of dryland and irrigated pasture, horticulture and native vegetation. Lake Hawdon South Conservation Park is approximately 2.5km to the west.

The property is located within a large flat low lying plain with elevation generally less than 10m (above sea level). The southern end of the West Dairy Range continues into the property running approximately north-south. On the property, this range is approximately 10m above sea level and provides the only area of elevated land.

The property currently operates two 62-hectare pivot irrigators in close proximity to the proposed clearance area. One pivot irrigator adjoins the northern side of the proposed clearance area and provides water suitable for pasture production with a salts content of 1200 parts per million (ppm). A second pivot irrigator is located approximately 700m to the east, but the water quality is marginal for pasture irrigation with a salts content of 3000 – 3500ppm. Soil tests are undertaken each year prior to irrigation to determine salt content. If winter rainfall has been insufficient to leach salts from the soil, this irrigator is not used that season. Ground water from the flat open land elsewhere on the property has been tested to contain 6000ppm salts content, which is too salty to grow improved pasture and not suitable for irrigated pasture.

Alternative Considered Irrigation Sites

In an effort to minimise tree clearance, alternative locations on the area of raised land were investigated (Figure 1). If appropriate for irrigation, these areas would impact fewer trees and are immediately north of an existing pivot irrigator. After investigation, this area was determined to be inappropriate due to,

- Slopes being too steep,
- Soil being too shallow, and
- Significant large patches of exposed sheet rock.

These findings excluded this location due to excessive water runoff under irrigation, leading to potential erosion problems. Due to water runoff there would be insufficient soil moisture to grow irrigated pasture.

These investigations led to the current proposed location. Initially, a 34-hectare pivot irrigator was assessed, but in an effort to minimise the number of trees impacted a smaller 32-hectare pivot has been decided upon. A pivot irrigator less than 32-hectares is considered to be economically unviable for pasture production in this locale.

A video of the alternative locations was provided by the director of Lake Hawdon Proprietors to the Coordinator, Assessments and Stakeholder Liaison during a meeting in Adelaide to discuss this clearance proposal and the inappropriate nature of the alternative sites.

This application will be the last to seek native vegetation clearance on the property. A third pivot irrigator will utilise the limit of property's water licence. Additionally, there are no other suitable locations on the property to install a pivot irrigator.

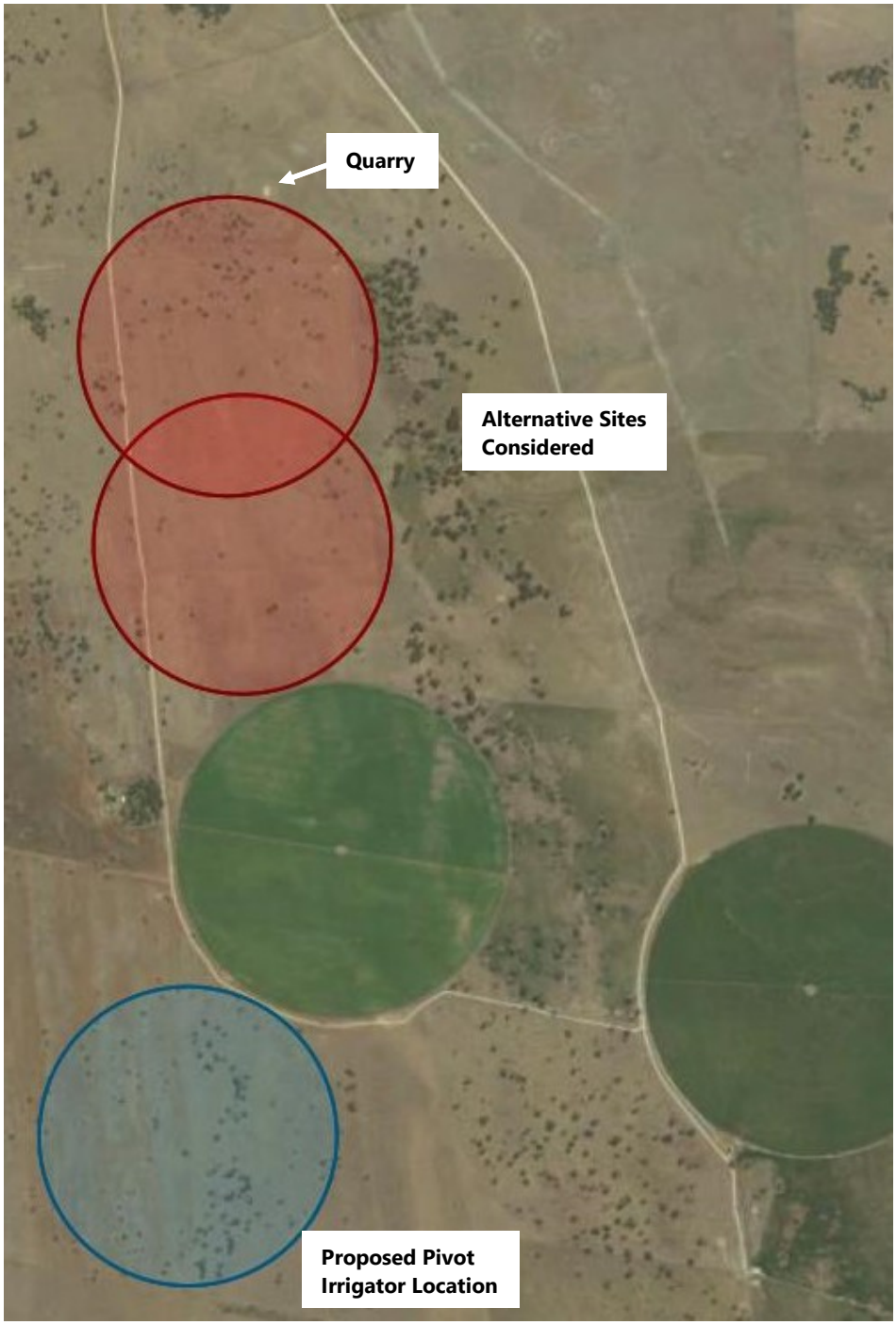

Figure 1. Alternative irrigation sites that were considered but deemed inappropriate due to excessive slope and exposed sheet rock. Red circles indicate alternative considered sites, blue circle indicates proposed clearance area for a pivot irrigator.

Figure 3. Example of exposed rock and unsuitable slope of a considered alternative site.

Figure 2. Example of unsuitable slope on a considered alternative site.

Existing Revegetation Program

The owner is aware of the need to improve ecological resources within the South Australian landscape. Having witnessed the long-term decline in tree health on the property and surrounding landscape, the family initiated a revegetation program on the property. Some of the oldest revegetation on the property is 28 years old. A more regular revegetation program commenced ten years ago. And the current annual revegetation program has been going for six years.

In addition to the family's revegetation program, any fallen trees and limbs that are blown over, are left where they lie. They are not 'tidied up'. The family understands and values the importance of fallen timber to wildlife.

2.3 General location map

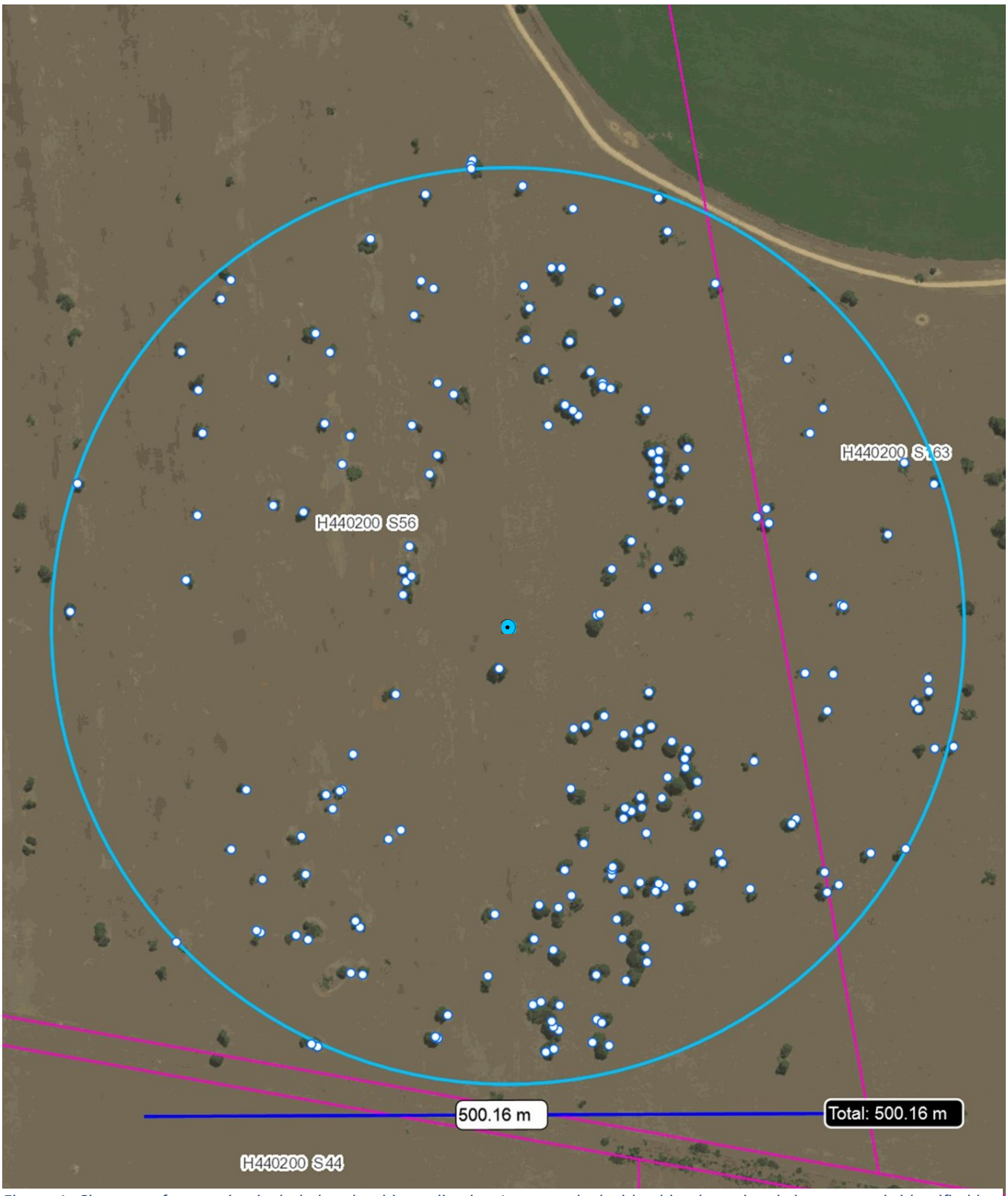

Figure 4. Site map of vegetation included under this application (trees marked with white dots, pivot irrigator area is identified by a blue circle and pivot centre by a blue dot).

Figure 5. Location map showing surrounding land use. Blue circle identifies location of proposed pivot irrigator.

Approvals required *or* obtained under other legislation (including past clearance approvals)

Prior Vegetation Clearance and Significant Environmental Benefit

The owner has previously met the requirements of the Native Vegetation Act. In 2010, the owner was granted approval to clear native vegetation for a pivot irrigator (Application 2010_2027). The Significant Environmental Benefit (SEB) for this clearance was achieved with onground revegetation works.

Current Proposal

This application addresses the approval process required under the Native Vegetation Act 1991. No future vegetation clearance applications will be made by the owner for land parcels identified in this application. The property does not contain other sites suitable for irrigation and, if vegetation clearance is approved, the proposed pivot irrigator will exhaust the water licence on this property.

The Environment Protection and Biodiversity Conservation Act 1999 is addressed in this application.

The National Parks and Wildlife Act 1972 is addressed in this application.

The owner has a water license for irrigation: License No. 13701. A copy of the license is attached with this application for native vegetation clearance.

3. Method

3.1 Flora assessment

The site was inspected over three days in 2019, February 28, March 6 and 7, using the method outlined in the Native Vegetation Council Scattered Tree Assessment Manual. The assessment included a search of the area under the proposed pivot irrigator for additional plant species.

3.2 Fauna assessment

Prior to the field assessment a desktop search was conducted using NatureMaps, Atlas of Living Australia and EPBC Protected Matters Search. These were undertaken to determine possible presence of fauna species listed under the EPBC Act 1999 or NP&W 1972 Act. A radius of five kilometres around the site was used for the desktop searches. In addition, a search of birds likely to use isolated paddock trees within the Bray area was undertaken (Source: G. Carpenter, Biodiversity Assessment Section, Department of Water, Land and Biodiversity Conservation).

All fauna captured in the desktop fauna assessments that could potentially use the site for habitat have been included in the final NVC Scattered Tree Assessment Scoresheets (attached). Fauna species unsuited to the habitat were excluded.

Additional fauna species observed during three days of field assessment were recorded.

4. Assessment outcomes

4.1 Vegetation Assessment

General description of the vegetation, the site and matters of significance

The site is located within a grazed paddock on a broad elevated ridge, which runs approximately north-south. The ridge separates two extensive flat plains. Soil under the proposed pivot irrigator is shallow and comprises a red sandy loam over calcrete. Native vegetation in the area is generally limited to paddock trees. However, a 30-hectare patch of bushland occurs approximately 400m to the west. Lake Hawdon South Conservation Park is 2.5 kilometres to the west.

Database searches identified one NPW Act listed species that could potentially use isolated paddock trees in the area for habitat. Additionally, two regionally rated species were also identified. Table 1 lists threatened fauna that may use the site.

Table 1. Threatened fauna that may use the trees for habitat.

Common name	Species	Conservation rating		
		AUS	SA	R
Blue-winged Parrot	*Neophema chrysostoma*		V	V
Southern Whiteface	*Aphelocephala leucopsis*			E
Yellow Thornbill	*Acanthiza nana*			R

During the site assessment two additional native plants were observed in very low numbers;

- *Muehlenbeckia gunnii* (Coastal Lignum); and
- *Rytidosperma geniculatum* (Kneed Wallaby-grass).

During the site assessment five native fauna species were observed including;

- Magpie (*Gymnorhina tibicen*);
- Blue Fairy Wren (*Malurus cyaneus*);
- Red-rumped Parrot (*Psephotus haematonotus*);
- Yellow-rumped Thornbill (*Acanthiza chrysorrhoa*); and
- Galah (*Eolophus roseicapilla*).

Details of the scattered trees proposed to be impacted

(All tree and related images are provided in a three separate documents; *Hurst Tree Images Parts 1, 2 and 3.pdf.)*

Tree 1

Tree 1 identified in Figure 6 is a *Melaleuca lanceolata* with a height of eight metres and in good condition. The tree exhibits approximately 10% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 50cm. The tree biodiversity score is 3.93 requiring 4.13 SEB points.

Tree 2

Tree 2 identified in Figure 6 is a *Melaleuca lanceolata* with a height of eight metres and in excellent condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 41cm. The tree biodiversity score is 3.76 requiring 3.94 SEB points.

Tree 3

Tree 3 identified in Figure 6 is a *Melaleuca lanceolata* with a height of eight metres and in good condition. The tree exhibits approximately 30% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 51cm. The tree biodiversity score is 3.48 requiring 3.65 SEB points.

Tree 4

Tree 4 identified in Figure 6 is a *Melaleuca lanceolata* with a height of three metres and in poor condition. The tree exhibits approximately 85% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 40cm. The tree biodiversity score is 0.32 requiring 0.33 SEB points.

Tree 5

Tree 5 identified in Figure 6 is a *Melaleuca lanceolata* with a height of seven metres and in good condition. The tree exhibits approximately 15% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 53cm. The tree biodiversity score is 3.40 requiring 3.57 SEB points.

Tree 6

Tree 6 identified in Figure 6 is a *Melaleuca lanceolata* with a height of six metres and in good condition. The tree exhibits approximately 15% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 57cm. The tree biodiversity score is 2.45 requiring 2.57 SEB points.

Tree 7

Tree 7 identified in Figure 6 is a *Melaleuca lanceolata* with a height of seven metres and in moderate condition. The tree exhibits approximately 40% dieback. The tree contained one large and one medium hollow. Both hollows are at ground level on the base of the trunk. The trunk diameter at 1.0m above the ground is 50cm. The tree biodiversity score is 3.66 requiring 3.85 SEB points.

Tree 8

Tree 8 identified in Figure 6 is a *Melaleuca lanceolata* with a height of eight metres and in good condition. The tree exhibits approximately 25% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 49cm. The tree biodiversity score is 3.53 requiring 3.71 SEB points.

Tree 9

Tree 9 identified in Figure 6 is a *Melaleuca lanceolata* with a height of seven metres and in good condition. The tree exhibits approximately 20% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 51cm. The tree biodiversity score is 2.58 requiring 2.71 SEB points.

Tree 10

Tree 10 identified in Figure 6 is an *Allocasuarina verticillata* with a height of four metres and in very poor condition. The tree exhibits approximately 90% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 25cm. The tree biodiversity score is 0.19 requiring 0.19 SEB points.

Tree 11

Tree 11 identified in Figure 6 is an *Allocasuarina verticillata* with a height of nine metres and in good condition. The tree exhibits approximately 30% dieback. The tree contained one large hollow near the base of the trunk. The trunk diameter at 1.0m above the ground is 105cm. The tree biodiversity score is 6.43 requiring 6.75 SEB points.

Tree 12

Tree 12 identified in Figure 6 is an *Allocasuarina verticillata* with a height of eight metres and in moderate condition. The tree exhibits approximately 40% dieback. The tree contained one small hollow near the base of the trunk. The trunk diameter at 1.0m above the ground is 61cm. The tree biodiversity score is 2.45 requiring 2.58 SEB points.

Tree 13

Tree 13 identified in Figure 6 is a *Melaleuca lanceolata* with a height of nine metres and in good condition. The tree exhibits approximately 15% dieback. The tree contained two small hollows. The trunk diameter at 1.0m above the ground is 62cm. The tree biodiversity score is 4.77 requiring 5.01 SEB points.

Tree 14

Tree 14 identified in Figure 6 is a *Melaleuca lanceolata* with a height of nine metres and in good condition. The tree exhibits approximately 15% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 15cm. The tree biodiversity score is 6.15 requiring 6.46 SEB points.

Tree 15

Tree 15 identified in Figure 6 is a *Melaleuca lanceolata* with a height of nine metres and in excellent condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 47cm. The tree biodiversity score is 3.96 requiring 4.15 SEB points.

Tree 16

Tree 16 identified in Figure 6 is a *Melaleuca lanceolata* with a height of 6.5 metres and in good condition. The tree exhibits approximately 15% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 41cm. The tree biodiversity score is 2.27 requiring 2.38 SEB points.

Tree 17

Tree 17 identified in Figure 6 is a *Melaleuca lanceolata* with a height of seven metres and in good condition. The tree exhibits approximately 20% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 41cm. The tree biodiversity score is 2.35 requiring 2.47 SEB points.

Tree 18

Tree 18 identified in Figure 6 is a *Melaleuca lanceolata* with a height of nine metres and in moderate condition. The tree exhibits approximately 25% dieback. The tree contained one large hollow. The trunk diameter at 1.0m above the ground is 68cm. The tree biodiversity score is 6.37 requiring 6.69 SEB points.

Tree 19

Tree 19 identified in Figure 6 is a *Melaleuca lanceolata* with a height of eight metres and in moderate condition. The tree exhibits approximately 30% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 54cm. The tree biodiversity score is 3.57 requiring 3.75 SEB points.

Tree 20

Tree 20 identified in Figure 6 is a *Melaleuca lanceolata* with a height of seven metres and in good condition. The tree exhibits approximately 15% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 50cm. The tree biodiversity score is 3.31 requiring 3.48 SEB points.

Tree 21

Tree 21 identified in Figure 6 is a *Melaleuca lanceolata* with a height of seven metres and in good condition. The tree exhibits approximately 10% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 49cm. The tree biodiversity score is 3.40 requiring 3.57 SEB points.

Tree 22

Tree 22 identified in Figure 6 is a *Melaleuca lanceolata* with a height of eight metres and in moderate condition. The tree exhibits approximately 75% dieback. The tree contained two medium hollows. The trunk diameter at 1.0m above the ground is 63cm. The tree biodiversity score is 3.74 requiring 3.93 SEB points.

Tree 23

Tree 23 identified in Figure 6 is a *Melaleuca lanceolata* with a height of five metres and in very poor condition. The tree exhibits approximately 90% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 49cm. The tree biodiversity score is 0.52 requiring 0.55 SEB points.

Tree 24

Tree 24 identified in Figure 6 is a *Melaleuca lanceolata* with a height of seven metres and in moderate condition. The tree exhibits approximately 40% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 54cm. The tree biodiversity score is 2.31 requiring 2.43 SEB points.

Tree 25

Tree 25 identified in Figure 6 is a *Melaleuca lanceolata* with a height of eight metres and in good condition. The tree exhibits approximately 20% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 64cm. The tree biodiversity score is 4.16 requiring 4.36 SEB points.

Tree 26

Tree 26 identified in Figure 6 is a *Melaleuca lanceolata* with a height of six metres and in poor condition. The tree exhibits approximately 70% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 43cm. The tree biodiversity score is 1.04 requiring 1.09 SEB points.

Tree 27

Tree 27 identified in Figure 6 is a *Melaleuca lanceolata* with a height of seven metres and in good condition. The tree exhibits approximately 15% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 46cm. The tree biodiversity score is 2.56 requiring 2.68 SEB points.

Tree 28

Tree 28 identified in Figure 6 is a *Melaleuca lanceolata* with a height of eight metres and in moderate condition. The tree exhibits approximately 30% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 53cm. The tree biodiversity score is 3.54 requiring 3.72 SEB points.

Tree 29

Tree 29 identified in Figure 6 is a *Melaleuca lanceolata* with a height of eight metres and in good condition. The tree exhibits approximately 10% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 51cm. The tree biodiversity score is 3.97 requiring 4.16 SEB points.

Tree 30
Tree 30 identified in Figure 6 is a *Melaleuca lanceolata* with a height of six metres and in good condition. The tree exhibits approximately 10% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 47cm. The tree biodiversity score is 2.31 requiring 2.42 SEB points.

Tree 31
Tree 31 identified in Figure 6 is a *Melaleuca lanceolata* with a height of eight metres and in moderate condition. The tree exhibits approximately 40% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 66cm. The tree biodiversity score is 3.72 requiring 3.90 SEB points.

Tree 32
Tree 32 identified in Figure 6 is a *Melaleuca lanceolata* with a height of nine metres and in good condition. The tree exhibits approximately 10% dieback. The tree contained one medium hollow. The trunk diameter at 1.0m above the ground is 68cm. The tree biodiversity score is 6.68 requiring 7.02 SEB points.

Tree 33
Tree 33 identified in Figure 6 is a *Melaleuca lanceolata* with a height of six metres and in good condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 48cm. The tree biodiversity score is 2.60 requiring 2.73 SEB points.

Tree 34
Tree 34 identified in Figure 6 is a *Melaleuca lanceolata* with a height of nine metres and in moderate condition. The tree exhibits approximately 40% dieback. The tree contained one small hollow. The trunk diameter at 1.0m above the ground is 60cm. The tree biodiversity score is 4.37requiring 4.59 SEB points.

Tree 35
Tree 35 identified in Figure 6 is a *Melaleuca lanceolata* with a height of seven metres and in good condition. The tree exhibits approximately 15% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 42cm. The tree biodiversity score is 2.51 requiring 2.63 SEB points.

Tree 36
Tree 36 identified in Figure 6 is a *Melaleuca lanceolata* with a height of eight metres and in good condition. The tree exhibits approximately 20% dieback. The tree contained one medium hollow. The trunk diameter at 1.0m above the ground is 55cm. The tree biodiversity score is 4.74 requiring 4.98 SEB points.

Tree 37
Tree 37 identified in Figure 6 is a *Melaleuca lanceolata* with a height of five metres and in excellent condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 36cm. The tree biodiversity score is 1.32 requiring 1.39 SEB points.

Tree 38
Tree 38 identified in Figure 6 is a *Melaleuca lanceolata* with a height of eight metres and in excellent condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 65cm. The tree biodiversity score is 5.98 requiring 6.28 SEB points.

Tree 39
Tree 39 identified in Figure 6 is a *Melaleuca lanceolata* with a height of four metres and in very poor condition. The tree exhibits approximately 90% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 28cm. The tree biodiversity score is 0.26 requiring 0.28 SEB points.

Tree 40
Tree 40 identified in Figure 6 is a *Melaleuca lanceolata* with a height of four metres and in moderate condition. The tree exhibits approximately 50% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 28cm. The tree biodiversity score is 0.40 requiring 0.43 SEB points.

Tree 41
Tree 41 identified in Figure 6 is a *Melaleuca lanceolata* with a height of three metres and in poor condition. The tree exhibits approximately 70% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 38cm. The tree biodiversity score is 0.35 requiring 0.37 SEB points.

Tree 42

Tree 42 identified in Figure 6 is a *Melaleuca lanceolata* with a height of nine metres and in moderate condition. The tree exhibits approximately 40% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 81cm. The tree biodiversity score is 4.57 requiring 4.80 SEB points.

Tree 43

Tree 43 identified in Figure 6 is a *Melaleuca lanceolata* with a height of six metres and in moderate condition. The tree exhibits approximately 60% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 52cm. The tree biodiversity score is 1.38 requiring 1.45 SEB points.

Tree 44

Tree 44 identified in Figure 6 is a *Melaleuca lanceolata* with a height of six metres and in very poor condition. The tree exhibits approximately 90% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 40cm. The tree biodiversity score is 0.56 requiring 0.59 SEB points.

Tree 45

Tree 45 identified in Figure 6 is a *Melaleuca lanceolata* with a height of four metres and in very poor condition. The tree exhibits approximately 95% dieback. The tree contained three small hollows. The trunk diameter at 1.0m above the ground is 50cm. The tree biodiversity score is 0.56 requiring 0.59 SEB points.

Tree 46

Tree 46 identified in Figure 6 is a *Melaleuca lanceolata* with a height of six metres and in very poor condition. The tree exhibits approximately 85% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 41cm. The tree biodiversity score is 0.61 requiring 0.64 SEB points.

Tree 47

Tree 47 identified in Figure 6 is a *Melaleuca lanceolata* with a height of eight metres and in poor condition. The tree exhibits approximately 70% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 29cm. The tree biodiversity score is 0.42 requiring 0.44 SEB points.

Tree 48

Tree 48 identified in Figure 6 is a *Melaleuca lanceolata* with a height of seven metres and in moderate condition. The tree exhibits approximately 40% dieback. The tree contained one small hollow. The trunk diameter at 1.0m above the ground is 45cm. The tree biodiversity score is 2.54 requiring 2.67 SEB points.

Tree 49

Tree 49 identified in Figure 6 is a *Melaleuca lanceolata* with a height of six metres and in moderate condition. The tree exhibits approximately 40% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 52cm. The tree biodiversity score is 2.15 requiring 2.25 SEB points.

Tree 50

Tree 50 identified in Figure 6 is a *Melaleuca lanceolata* with a height of three metres and in very poor condition. The tree exhibits approximately 90% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 27cm. The tree biodiversity score is 0.20 requiring 0.21 SEB points.

Tree 51

Tree 51 identified in Figure 6 is a *Melaleuca lanceolata* with a height of five metres and in moderate condition. The tree exhibits approximately 40% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 28cm. The tree biodiversity score is 0.55 requiring 0.58 SEB points.

Tree 52

Tree 52 identified in Figure 3 is a *Melaleuca lanceolata* with a height of three metres and in very poor condition. The tree exhibits approximately 80% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 47cm. The tree biodiversity score is 0.41 requiring 0.43 SEB points.

Tree 53

Tree 53 identified in Figure 3 is a *Melaleuca lanceolata* with a height of five metres and in good condition. The tree exhibits approximately 20% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 58cm. The tree biodiversity score is 2.26 requiring 2.37 SEB points.

Tree 54

Tree 54 identified in Figure 3 is a *Melaleuca lanceolata* with a height of six metres and in moderate condition. The tree exhibits approximately 35% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 51cm. The tree biodiversity score is 2.20 requiring 2.31 SEB points.

Tree 55
Tree 55 identified in Figure 3 is a *Melaleuca lanceolata* with a height of seven metres and in good condition. The tree exhibits approximately 30% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 40cm. The tree biodiversity score is 2.18 requiring 2.28 SEB points.

Tree 56
Tree 56 identified in Figure 3 is a *Melaleuca lanceolata* with a height of seven metres and in good condition. The tree exhibits approximately 10% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 44cm. The tree biodiversity score is 3.34 requiring 3.51 SEB points.

Tree 57
Tree 57 identified in Figure 3 is a *Melaleuca lanceolata* with a height of five metres and in good condition. The tree exhibits approximately 10% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 38cm. The tree biodiversity score is 1.33 requiring 1.39 SEB points.

Tree 58
Tree 58 identified in Figure 3 is a *Melaleuca lanceolata* with a height of four metres and in poor condition. The tree exhibits approximately 80% dieback. The tree contained two small hollows. The trunk diameter at 1.0m above the ground is 24cm. The tree biodiversity score is 0.33 requiring 0.35 SEB points.

Tree 59
Tree 59 identified in Figure 3 is a *Melaleuca lanceolata* with a height of seven metres and in good condition. The tree exhibits approximately 15% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 62cm. The tree biodiversity score is 4.02 requiring 4.23 SEB points.

Tree 60
Tree 60 identified in Figure 3 is a *Melaleuca lanceolata* with a height of six metres and in good condition. The tree exhibits approximately 40% dieback. The tree contained one medium and one large hollow. The trunk diameter at 1.0m above the ground is 58cm. The tree biodiversity score is 3.74 requiring 3.93 SEB points.

Tree 61
Tree 61 identified in Figure 7 is a *Melaleuca lanceolata* with a height of seven metres and in moderate condition. The tree exhibits approximately 50% dieback. The tree contained one large hollow. The trunk diameter at 1.0m above the ground is 51cm. The tree biodiversity score is 3.79 requiring 3.98 SEB points.

Tree 62
Tree 62 identified in Figure 7 is a *Melaleuca lanceolata* with a height of seven metres and in moderate condition. The tree exhibits approximately 40% dieback. The tree contained one small hollow. The trunk diameter at 1.0m above the ground is 44cm. The tree biodiversity score is 2.53 requiring 2.65 SEB points.

Tree 63
Tree 63 identified in Figure 7 is a *Melaleuca lanceolata* with a height of six metres and in poor condition. The tree exhibits approximately 50% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 46cm. The tree biodiversity score is 1.36 requiring 1.43 SEB points.

Tree 64
Tree 64 identified in Figure 7 is a *Melaleuca lanceolata* with a height of seven metres and in good condition. The tree exhibits approximately 30% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 59cm. The tree biodiversity score is 3.55 requiring 3.73 SEB points.

Tree 65
Tree 65 identified in Figure 7 is a *Melaleuca lanceolata* with a height of six metres and in moderate condition. The tree exhibits approximately 40% dieback. The tree contained one small and two medium hollows. The trunk diameter at 1.0m above the ground is 42cm. The tree biodiversity score is 2.41 requiring 2.53 SEB points.

Tree 66
Tree 66 identified in Figure 7 is a *Melaleuca lanceolata* with a height of seven metres and in good condition. The tree exhibits approximately 35% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 62cm. The tree biodiversity score is 3.52 requiring 3.70 SEB points.

Tree 67

Tree 67 identified in Figure 7 is a *Melaleuca lanceolata* with a height of seven metres and in good condition. The tree exhibits approximately 45% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 58cm. The tree biodiversity score is 2.54 requiring 2.67 SEB points.

Tree 68

Tree 68 identified in Figure 7 is a *Melaleuca lanceolata* with a height of five metres and in poor condition. The tree exhibits approximately 70% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 44cm. The tree biodiversity score is 0.61 requiring 0.64 SEB points.

Tree 69

Tree 69 identified in Figure 7 is a *Melaleuca lanceolata* with a height of eight metres and in good condition. The tree exhibits approximately 10% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 40cm. The tree biodiversity score is 3.59 requiring 3.77 SEB points.

Tree 70

Tree 70 identified in Figure 7 is a *Melaleuca lanceolata* with a height of seven metres and in moderate condition. The tree exhibits approximately 45% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 56cm. The tree biodiversity score is 2.50 requiring 2.62 SEB points.

Tree 71

Tree 71 identified in Figure 7 is a *Melaleuca lanceolata* with a height of six metres and in good condition. The tree exhibits approximately 10% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 34cm. The tree biodiversity score is 1.93 requiring 2.03 SEB points.

Tree 72

Tree 72 identified in Figure 7 is a *Melaleuca lanceolata* with a height of six metres and in excellent condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 50cm. The tree biodiversity score is 3.38 requiring 3.55 SEB points.

Tree 73

Tree 73 identified in Figure 7 is a *Melaleuca lanceolata* with a height of 8.5 metres and in excellent condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 73cm. The tree biodiversity score is 6.35 requiring 6.67 SEB points.

Tree 74

Tree 74 identified in Figure 7 is a *Melaleuca lanceolata* with a height of six metres and in excellent condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 63cm. The tree biodiversity score is 3.77 requiring 3.96 SEB points.

Tree 75

Tree 75 identified in Figure 7 is a *Melaleuca lanceolata* with a height of five metres and in good condition. The tree exhibits approximately 10% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 41cm. The tree biodiversity score is 1.42 requiring 1.50 SEB points.

Tree 76

Tree 76 identified in Figure 7 is a *Melaleuca lanceolata* with a height of five metres and in excellent condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 41cm. The tree biodiversity score is 1.95 requiring 2.04 SEB points.

Tree 77

Tree 77 identified in Figure 7 is a *Melaleuca lanceolata* with a height of five metres and in excellent condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 41cm. The tree biodiversity score is 1.97 requiring 2.07 SEB points.

Tree 78

Tree 78 identified in Figure 7 is a *Melaleuca lanceolata* with a height of five metres and in excellent condition. The tree exhibits no dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 67cm. The tree biodiversity score is 3.52 requiring 3.70 SEB points.

Tree 79

Tree 79 identified in Figure 7 is a *Melaleuca lanceolata* with a height of five metres and in excellent condition. The tree exhibits no dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 40cm. The tree biodiversity score is 2.00 requiring 2.10 SEB points.

Tree 80
Tree 80 identified in Figure 7 is a *Melaleuca lanceolata* with a height of five metres and in good condition. The tree exhibits approximately 10% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 31cm. The tree biodiversity score is 1.15 requiring 1.21 SEB points.

Tree 81
Tree 81 identified in Figure 7 is a *Melaleuca lanceolata* with a height of six metres and in excellent condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 40cm. The tree biodiversity score is 2.23 requiring 2.34 SEB points.

Tree 82
Tree 82 identified in Figure 7 is a *Melaleuca lanceolata* with a height of seven metres and in excellent condition. The tree exhibits no dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 86cm. The tree biodiversity score is 6.41 requiring 6.73 SEB points.

Tree 83
Tree 83 identified in Figure 7 is a *Melaleuca lanceolata* with a height of nine metres and in excellent condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 78cm. The tree biodiversity score is 6.61 requiring 6.94 SEB points.

Tree 84
Tree 84 identified in Figure 7 is a *Melaleuca lanceolata* with a height of five metres and in excellent condition. The tree exhibits no dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 30cm. The tree biodiversity score is 1.22 requiring 1.28 SEB points.

Tree 85
Tree 85 identified in Figure 7 is a *Melaleuca lanceolata* with a height of five metres and in excellent condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 51cm. The tree biodiversity score is 2.35 requiring 2.47 SEB points.

Tree 86
Tree 86 identified in Figure 7 is a *Melaleuca lanceolata* with a height of five metres and in excellent condition. The tree exhibits no dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 43cm. The tree biodiversity score is 2.13 requiring 2.23 SEB points.

Tree 87
Tree 87 identified in Figure 7 is a *Melaleuca lanceolata* with a height of six metres and in excellent condition. The tree exhibits no dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 65cm. The tree biodiversity score is 3.96 requiring 4.16 SEB points.

Tree 88
Tree 88 identified in Figure 7 is a *Melaleuca lanceolata* with a height of six metres and in excellent condition. The tree exhibits no dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 52cm. The tree biodiversity score is 3.55 requiring 3.72 SEB points.

Tree 89
Tree 89 identified in Figure 7 is a *Melaleuca lanceolata* with a height of four metres and in good condition. The tree exhibits approximately 10% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 23cm. The tree biodiversity score is 0.53 requiring 0.56 SEB points.

Tree 90
Tree 90 identified in Figure 7 is a *Melaleuca lanceolata* with a height of seven metres and in very poor condition. The tree exhibits approximately 98% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 37cm. The tree biodiversity score is 0.59 requiring 0.62 SEB points.

Tree 91
Tree 91 identified in Figure 7 is a *Melaleuca lanceolata* with a height of nine metres and in good condition. The tree exhibits approximately 15% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 72cm. The tree biodiversity score is 5.94 requiring 6.24 SEB points.

Tree 92

Tree 92 identified in Figure 7 is a *Melaleuca lanceolata* with a height of five metres and in good condition. The tree exhibits approximately 25% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 39cm. The tree biodiversity score is 1.19 requiring 1.25 SEB points.

Tree 93
Tree 93 identified in Figure 7 is a *Melaleuca lanceolata* with a height of five metres and in good condition. The tree exhibits approximately 15% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 37cm. The tree biodiversity score is 1.24 requiring 1.30 SEB points.

Tree 94
Tree 94 identified in Figure 7 is a *Melaleuca lanceolata* with a height of six metres and in moderate condition. The tree exhibits approximately 30% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 43cm. The tree biodiversity score is 1.99 requiring 2.09 SEB points.

Tree 95
Tree 95 identified in Figure 7 is a *Melaleuca lanceolata* with a height of five metres and in excellent condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 45cm. The tree biodiversity score is 2.13 requiring 2.23 SEB points.

Tree 96
Tree 96 identified in Figure 7 is a *Melaleuca lanceolata* with a height of five metres and in excellent condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 40cm. The tree biodiversity score is 1.93 requiring 2.03 SEB points.

Tree 97
Tree 97 identified in Figure 7 is a *Melaleuca lanceolata* with a height of six metres and in good condition. The tree exhibits approximately 10% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 32cm. The tree biodiversity score is 1.39 requiring 1.46 SEB points.

Tree 98
Tree 98 identified in Figure 7 is a *Melaleuca lanceolata* with a height of six metres and in good condition. The tree exhibits approximately 10% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 52cm. The tree biodiversity score is 3.32 requiring 3.49 SEB points.

Tree 99
Tree 99 identified in Figure 7 is a *Melaleuca lanceolata* with a height of six metres and in good condition. The tree exhibits approximately 10% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 36cm. The tree biodiversity score is 2.01 requiring 2.11 SEB points.

Tree 100
Tree 100 identified in Figure 7 is a *Melaleuca lanceolata* with a height of six metres and in good condition. The tree exhibits approximately 10% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 42cm. The tree biodiversity score is 2.24 requiring 2.36 SEB points.

Tree 101
Tree 101 identified in Figure 7 is a *Melaleuca lanceolata* with a height of five metres and in good condition. The tree exhibits approximately 15% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 31cm. The tree biodiversity score is 1.09 requiring 1.14 SEB points.

Tree 102
Tree 102 identified in Figure 7 is a *Melaleuca lanceolata* with a height of seven metres and in excellent condition. The tree exhibits approximately 5% dieback. The tree contained one small hollow. The trunk diameter at 1.0m above the ground is 59cm. The tree biodiversity score is 4.74 requiring 4.97 SEB points.

Tree 103
Tree 103 identified in Figure 7 is a *Melaleuca lanceolata* with a height of four metres and in excellent condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 46cm. The tree biodiversity score is 1.40 requiring 1.48 SEB points.

Tree 104
Tree 104 identified in Figure 7 is a *Melaleuca lanceolata* with a height of five metres and in good condition. The tree exhibits approximately 10% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 32cm. The tree biodiversity score is 1.18 requiring 1.24 SEB points.

Tree 105
Tree 105 identified in Figure 7 is a *Melaleuca lanceolata* with a height of five metres and in excellent condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 39cm. The tree biodiversity score is 1.40 requiring 1.48 SEB points.

Tree 106
Tree 106 identified in Figure 7 is a *Melaleuca lanceolata* with a height of five metres and in excellent condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 41cm. The tree biodiversity score is 1.97 requiring 2.07 SEB points.

Tree 107
Tree 107 identified in Figure 7 is a *Melaleuca lanceolata* with a height of eight metres and in poor condition. The tree exhibits approximately 70% dieback. The tree contained two small hollows. The trunk diameter at 1.0m above the ground is 70cm. The tree biodiversity score is 3.93 requiring 4.13 SEB points.

Tree 108
Tree 108 identified in Figure 7 is a *Melaleuca lanceolata* with a height of seven metres and in good condition. The tree exhibits approximately 20% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 56cm. The tree biodiversity score is 3.71 requiring 3.89 SEB points.

Tree 109
Tree 109 identified in Figure 7 is a *Melaleuca lanceolata* with a height of seven metres and in excellent condition. The tree exhibits approximately 5% dieback. The tree contained two small hollows. The trunk diameter at 1.0m above the ground is 62cm. The tree biodiversity score is 4.86 requiring 5.10 SEB points.

Tree 110
Tree 110 identified in Figure 7 is a *Melaleuca lanceolata* with a height of eight metres and in excellent condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 73cm. The tree biodiversity score is 6.37 requiring 6.68 SEB points.

Tree 111
Tree 111 identified in Figure 7 is a *Melaleuca lanceolata* with a height of six metres and in good condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 51cm. The tree biodiversity score is 3.40 requiring 3.57 SEB points.

Tree 112
Tree 112 identified in Figure 7 is a *Melaleuca lanceolata* with a height of four metres and in excellent condition. The tree exhibits no dieback. The tree contained one small hollow. The trunk diameter at 1.0m above the ground is 44cm. The tree biodiversity score is 2.15 requiring 2.26 SEB points.

Tree 113
Tree 113 identified in Figure 7 is a *Melaleuca lanceolata* with a height of six metres and in good condition. The tree exhibits approximately 10% dieback. The tree contained one medium hollow. The trunk diameter at 1.0m above the ground is 72cm. The tree biodiversity score is 4.50 requiring 4.72 SEB points.

Tree 114
Tree 114 identified in Figure 7 is a *Melaleuca lanceolata* with a height of five metres and in good condition. The tree exhibits approximately 30% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 36cm. The tree biodiversity score is 1.09 requiring 1.14 SEB points.

Tree 115
Tree 115 identified in Figure 7 is a *Melaleuca lanceolata* with a height of four metres and in good condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 44cm. The tree biodiversity score is 1.32 requiring 1.39 SEB points.

Tree 116
Tree 116 identified in Figure 7 is a *Melaleuca lanceolata* with a height of four metres and in excellent condition. The tree exhibits no dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 36cm. The tree biodiversity score is 1.16 requiring 1.22 SEB points.

Tree 117

Tree 117 identified in Figure 7 is a *Melaleuca lanceolata* with a height of six metres and in excellent condition. The tree exhibits no dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 45cm. The tree biodiversity score is 2.56 requiring 2.68 SEB points.

Tree 118

Tree 118 identified in Figure 7 is a *Melaleuca lanceolata* with a height of six metres and in excellent condition. The tree exhibits no dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 49cm. The tree biodiversity score is 3.43 requiring 3.60 SEB points.

Tree 119

Tree 119 identified in Figure 7 is a *Melaleuca lanceolata* with a height of six metres and in excellent condition. The tree exhibits no dieback. The tree contained two small hollows. The trunk diameter at 1.0m above the ground is 61cm. The tree biodiversity score is 4.34 requiring 4.56 SEB points.

Tree 120

Tree 120 identified in Figure 7 is an *Allocasuarina verticillata* with a height of six metres and in good condition. The tree exhibits approximately 10% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 43cm. The tree biodiversity score is 1.36 requiring 1.43 SEB points.

Tree 121

Tree 121 identified in Figure 7 is a *Melaleuca lanceolata* with a height of four metres and in good condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 26cm. The tree biodiversity score is 0.60 requiring 0.63 SEB points.

Tree 122

Tree 122 identified in Figure 8 is a *Melaleuca lanceolata* with a height of four metres and in very poor condition. The tree exhibits approximately 95% dieback. The tree contained one small, one medium and one large hollow. The trunk diameter at 1.0m above the ground is 27cm. The tree biodiversity score is 0.37 requiring 0.39 SEB points.

Tree 123

Tree 123 identified in Figure 8 is a *Melaleuca lanceolata* with a height of six metres and in good condition. The tree exhibits approximately 15% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 54cm. The tree biodiversity score is 2.61 requiring 2.74 SEB points.

Tree 124

Tree 124 identified in Figure 8 is a *Melaleuca lanceolata* with a height of eight metres and in good condition. The tree exhibits approximately 10% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 42cm. The tree biodiversity score is 3.73 requiring 3.92 SEB points.

Tree 125

Tree 125 identified in Figure 8 is a *Melaleuca lanceolata* with a height of eight metres and in moderate condition. The tree exhibits approximately 40% dieback. The tree contained two medium hollows. The trunk diameter at 1.0m above the ground is 52cm. The tree biodiversity score is 4.61 requiring 4.84 SEB points.

Tree 126

Tree 126 identified in Figure 8 is a *Melaleuca lanceolata* with a height of four metres and in good condition. The tree exhibits approximately 10% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 55cm. The tree biodiversity score is 2.02 requiring 2.13 SEB points.

Tree 127

Tree 127 identified in Figure 8 is a *Melaleuca lanceolata* with a height of nine metres and in good condition. The tree exhibits approximately 10% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 67cm. The tree biodiversity score is 6.07 requiring 6.37 SEB points.

Tree 128

Tree 128 identified in Figure 8 is a *Melaleuca lanceolata* with a height of eight metres and in good condition. The tree exhibits approximately 25% dieback. The tree contained one small hollow. The trunk diameter at 1.0m above the ground is 54cm. The tree biodiversity score is 4.57 requiring 4.80 SEB points.

Tree 129

Tree 129 identified in Figure 8 is a *Melaleuca lanceolata* with a height of four metres and in poor condition. The tree exhibits approximately 90% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 29cm. The tree biodiversity score is 0.27 requiring 0.28 SEB points.

Tree 130
Tree 130 identified in Figure 8 is a *Melaleuca lanceolata* with a height of seven metres and in moderate condition. The tree exhibits approximately 40% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 39cm. The tree biodiversity score is 2.00 requiring 2.10 SEB points.

Tree 131
Tree 131 identified in Figure 8 is a *Melaleuca lanceolata* with a height of five metres and in moderate condition. The tree exhibits approximately 40% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 22cm. The tree biodiversity score is 0.47 requiring 0.49 SEB points.

Tree 132
Tree 132 identified in Figure 8 is a *Melaleuca lanceolata* with a height of four metres and in good condition. The tree exhibits approximately 30% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 25cm. The tree biodiversity score is 0.46 requiring 0.46 SEB points.

Tree 133
Tree 133 identified in Figure 8 is a *Melaleuca lanceolata* with a height of six metres and in good condition. The tree exhibits approximately 10% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 40cm. The tree biodiversity score is 2.18 requiring 2.28 SEB points.

Tree 134
Tree 134 identified in Figure 8 is a *Melaleuca lanceolata* with a height of 4.5 metres and in very poor condition. The tree exhibits approximately 98% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 43cm. The tree biodiversity score is 0.42 requiring 0.44 SEB points.

Tree 135
Tree 135 identified in Figure 8 is an *Allocasuarina verticillata* with a height of 2.5 metres and in very poor condition. The tree exhibits approximately 98% dieback. The tree contained one medium hollow. The trunk diameter at 1.0m above the ground is 73cm. The tree biodiversity score is 0.48 requiring 0.51 SEB points.

Tree 136
Tree 136 identified in Figure 8 is a *Melaleuca lanceolata* with a height of eight metres and in moderate condition. The tree exhibits approximately 45% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 40cm. The tree biodiversity score is 2.28 requiring 2.40 SEB points.

Tree 137
Tree 137 identified in Figure 8 is a *Melaleuca lanceolata* with a height of six metres and in good condition. The tree exhibits approximately 10% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 30cm. The tree biodiversity score is 1.31 requiring 1.38 SEB points.

Tree 138
Tree 138 identified in Figure 8 is a *Melaleuca lanceolata* with a six of eight metres and in good condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 42cm. The tree biodiversity score is 2.33 requiring 2.44 SEB points.

Tree 139
Tree 139 identified in Figure 8 is a *Melaleuca lanceolata* with a height of six metres and in good condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 28cm. The tree biodiversity score is 1.32 requiring 1.39 SEB points.

Tree 140
Tree 140 identified in Figure 8 is a *Melaleuca lanceolata* with a height of five metres and in good condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 51cm. The tree biodiversity score is 2.36 requiring 2.48 SEB points.

Tree 141
Tree 141 identified in Figure 8 is a *Melaleuca lanceolata* with a height of five metres and in good condition. The tree exhibits approximately 25% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 45cm. The tree biodiversity score is 1.37 requiring 1.44 SEB points.

Tree 142
Tree 142 identified in Figure 8 is a *Melaleuca lanceolata* with a height of five metres and in good condition. The tree exhibits approximately 90% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground was estimated to be 25cm (base of trunk obstructed). The tree biodiversity score is 0.31 requiring 0.32 SEB points.

Tree 143
Tree 143 identified in Figure 8 is a *Melaleuca lanceolata* with a height of eight metres and in moderate condition. The tree exhibits approximately 60% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 39cm. The tree biodiversity score is 1.97 requiring 2.07 SEB points.

Tree 144
Tree 144 identified in Figure 8 is a *Melaleuca lanceolata* with a height of five metres and in poor condition. The tree exhibits approximately 90% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 29cm. The tree biodiversity score is 0.34 requiring 0.36 SEB points.

Tree 145
Tree 145 identified in Figure 8 is a *Melaleuca lanceolata* with a height of six metres and in moderate condition. The tree exhibits approximately 40% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 35cm. The tree biodiversity score is 1.15 requiring 1.21 SEB points.

Trees 146 – 153 (Clump A)
Tree 146 - 153 identified in Figure 8 are *Melaleuca lanceolata* with an average height of five metres and in good condition. On average, the tree exhibit approximately 20% dieback. The trees contained no hollows. On average the trunk diameter at 1.0m above the ground is 37cm. On average each tree biodiversity score is 1.20 requiring 1.26 SEB points. In total, Clump A's tree biodiversity score is 9.60 requiring 10.08 SEB points.

Tree 154
Tree 154 identified in Figure 8 is a *Melaleuca lanceolata* with a height of eight metres and in moderate condition. The tree exhibits approximately 45% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 51cm. The tree biodiversity score is 3.44 requiring 3.61 SEB points.

Tree 155
Tree 155 identified in Figure 8 is a *Melaleuca lanceolata* with a height of six metres and in poor condition. The tree exhibits approximately 70% dieback. The tree contained one medium hollow. The trunk diameter at 1.0m above the ground is 50cm. The tree biodiversity score is 2.17 requiring 2.28 SEB points.

Tree 156
Tree 156 identified in Figure 8 is a *Melaleuca lanceolata* with a height of seven metres and in poor condition. The tree exhibits approximately 80% dieback. The tree contained one small hollow. The trunk diameter at 1.0m above the ground is 57cm. The tree biodiversity score is 2.27 requiring 2.39 SEB points. One *Muehlenbeckia gunnii* plant was growing within the tree.

Tree 157
Tree 157 identified in Figure 8 is a *Melaleuca lanceolata* with a height of eight metres and in very poor condition. The tree exhibits approximately 90% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 53cm. The tree biodiversity score is 2.03 requiring 2.13 SEB points.

Tree 158
Tree 158 identified in Figure 8 is a *Melaleuca lanceolata* with a height of seven metres and in good condition. The tree exhibits approximately 70% dieback. The tree contained one medium hollow. The trunk diameter at 1.0m above the ground is 49cm. The tree biodiversity score is 2.25 requiring 2.36 SEB points.

Tree 159
Tree 159 identified in Figure 8 is a *Melaleuca lanceolata* with a height of seven metres and in excellent condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 50cm. The tree biodiversity score is 3.85 requiring 4.04 SEB points.

Tree 160
Tree 160 identified in Figure 9 is a *Melaleuca lanceolata* with a height of six metres and in good condition. The tree exhibits approximately 20% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 52cm. The tree biodiversity score is 2.48 requiring 2.61 SEB points.

Tree 161
Tree 161 identified in Figure 9 is a *Melaleuca lanceolata* with a height of five metres and in poor condition. The tree exhibits approximately 70% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground was estimated to be 25cm (base of trunk obstructed). The tree biodiversity score is 0.38 requiring 0.40 SEB points.

Tree 162
Tree 162 identified in Figure 9 is a *Melaleuca lanceolata* with a height of seven metres and in very poor condition. The tree exhibits approximately 90% dieback. The tree contained one small hollow. The trunk diameter at 1.0m above the ground is 38cm. The tree biodiversity score is 1.14 requiring 1.20 SEB points.

Tree 163
Tree 163 identified in Figure 9 is a *Melaleuca lanceolata* with a height of nine metres and in good condition. The tree exhibits approximately 20% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 54cm. The tree biodiversity score is 4.16 requiring 4.37 SEB points.

Tree 164
Tree 164 identified in Figure 9 is a *Melaleuca lanceolata* with a height of nine metres and in moderate condition. The tree exhibits approximately 35% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 52cm. The tree biodiversity score is 3.72 requiring 3.90 SEB points.

Tree 165
Tree 165 identified in Figure 9 is a *Melaleuca lanceolata* with a height of six metres and in good condition. The tree exhibits approximately 25% dieback. The tree contained one small hollow. The trunk diameter at 1.0m above the ground is 44cm. The tree biodiversity score is 2.40 requiring 2.52 SEB points.

Tree 166
Tree 166 identified in Figure 9 is a *Melaleuca lanceolata* with a height of seven metres and in poor condition. The tree exhibits approximately 70% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 58cm. The tree biodiversity score is 2.13 requiring 2.24 SEB points.

Tree 167
Tree 167 identified in Figure 9 is a *Melaleuca lanceolata* with a height of six metres and in good condition. The tree exhibits approximately 15% dieback. The tree contained one small hollow occupied by bees. The trunk diameter at 1.0m above the ground was estimated to be 40cm (base of trunk obstructed). The tree biodiversity score is 2.40 requiring 2.52 SEB points.

Tree 168
Tree 168 identified in Figure 9 is a *Melaleuca lanceolata* with a height of five metres and in good condition. The tree exhibits approximately 20% dieback. The tree contained one small hollow. The trunk diameter at 1.0m above the ground is 46cm. The tree biodiversity score is 3.93 requiring 4.13 SEB points.

Tree 169
Tree 169 identified in Figure 9 is a *Melaleuca lanceolata* with a height of seven metres and in moderate condition. The tree exhibits approximately 45% dieback. The tree contained one medium hollow. The trunk diameter at 1.0m above the ground is 61cm. The tree biodiversity score is 3.72 requiring 3.91 SEB points.

Tree 170
Tree 170 identified in Figure 9 is a *Melaleuca lanceolata* with a height of five metres and in moderate condition. The tree exhibits approximately 50% dieback. The tree contained one large hollow. The trunk diameter at 1.0m above the ground is 36cm. The tree biodiversity score is 1.26 requiring 1.33 SEB points.

Tree 171
Tree 171 identified in Figure 9 is a *Melaleuca lanceolata* with a height of eight metres and in good condition. The tree exhibits approximately 25% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 35cm. The tree biodiversity score is 2.37 requiring 2.49 SEB points.

Tree 172
Tree 172 identified in Figure 9 is a *Melaleuca lanceolata* with a height of five metres and in poor condition. The tree exhibits approximately 80% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 37cm. The tree biodiversity score is 0.48 requiring 0.50 SEB points.

Tree 173

Tree 173 identified in Figure 9 is a *Melaleuca lanceolata* with a height of six metres and in very poor condition. The tree exhibits approximately 80% dieback. The tree contained one medium hollow. The trunk diameter at 1.0m above the ground is 41cm. The tree biodiversity score is 1.11 requiring 1.17 SEB points.

Tree 174
Tree 174 identified in Figure 9 is a *Melaleuca lanceolata* with a height of seven metres and in poor condition. The tree exhibits approximately 70% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 51cm. The tree biodiversity score is 1.98 requiring 2.08 SEB points.

Tree 175
Tree 175 identified in Figure 9 is a *Melaleuca lanceolata* with a height of seven metres and in poor condition. The tree exhibits approximately 75% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 39cm. The tree biodiversity score is 1.14 requiring 1.19 SEB points.

Tree 176
Tree 176 identified in Figure 9 is a *Melaleuca lanceolata* with a height of seven metres and in good condition. The tree exhibits approximately 15% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 61cm. The tree biodiversity score is 3.97 requiring 4.17 SEB points.

Tree 177
Tree 177 identified in Figure 9 is a *Melaleuca lanceolata* with a height of eight metres and in good condition. The tree exhibits approximately 25% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 30cm. The tree biodiversity score is 2.16 requiring 2.27 SEB points.

Tree 178
Tree 178 identified in Figure 9 is a *Melaleuca lanceolata* with a height of seven metres and in moderate condition. The tree exhibits approximately 70% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 63cm. The tree biodiversity score is 2.23 requiring 2.34 SEB points.

Tree 179
Tree 179 identified in Figure 9 is a *Melaleuca lanceolata* with a height of nine metres and in moderate condition. The tree exhibits approximately 30% dieback. The tree contained two small hollows, one of which was occupied by bees. The trunk diameter at 1.0m above the ground is 55cm. The tree biodiversity score is 4.46 requiring 4.68 SEB points.

Tree 180
Tree 180 identified in Figure 9 is a *Melaleuca lanceolata* with a height of eight metres and in moderate condition. The tree exhibits approximately 30% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 48cm. The tree biodiversity score is 3.62 requiring 3.80 SEB points.

Tree 181
Tree 181 identified in Figure 9 is a *Melaleuca lanceolata* with a height of six metres and in poor condition. The tree exhibits approximately 70% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 40cm. The tree biodiversity score is 1.01 requiring 1.06 SEB points.

Tree 182
Tree 182 identified in Figure 9 is a *Melaleuca lanceolata* with a height of 11 metres and in moderate condition. The tree exhibits approximately 40% dieback. The tree contained two small hollows. The trunk diameter at 1.0m above the ground is 63cm. The tree biodiversity score is 4.47 requiring 4.69 SEB points.

Tree 183
Tree 183 identified in Figure 9 is a *Melaleuca lanceolata* with a height of four metres and in moderate condition. The tree exhibits approximately 25% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 30cm. The tree biodiversity score is 0.55 requiring 0.57 SEB points.

Tree 184
Tree 184 identified in Figure 9 is a *Melaleuca lanceolata* with a height of eight metres and in very poor condition. The tree exhibits approximately 95% dieback. The tree contained one large hollow. The trunk diameter at 1.0m above the ground is 52cm. The tree biodiversity score is 2.59 requiring 2.72 SEB points.

Tree 185 – 189 (Clump B)
Trees 185 to 189 identified in Figure 9 are *Melaleuca lanceolata* with an average height of four metres and in moderate condition. The trees exhibit approximately 35% dieback. The trees contained one small hollow. The

average trunk diameter at 1.0m above the ground is 36cm. The average tree biodiversity score is 1.02 requiring 1.07 SEB points. Total tree biodiversity for the clump is 5.10 requiring 5.35 SEB points.

Tree 190

Tree 190 identified in Figure 9 is a *Melaleuca lanceolata* with a height of four metres and in moderate condition. The tree exhibits approximately 30% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 35cm. The tree biodiversity score is 0.59 requiring 0.62 SEB points.

Tree 191

Tree 191 identified in Figure 9 is a *Melaleuca lanceolata* with a height of eight metres and in moderate condition. The tree exhibits approximately 30% dieback. The tree contained one medium hollow. The trunk diameter at 1.0m above the ground is 50cm. The tree biodiversity score is 4.28 requiring 4.49 SEB points.

Tree 192

Tree 192 identified in Figure 9 is a *Melaleuca lanceolata* with a height of six metres and in moderate condition. The tree exhibits approximately 40% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 50cm. The tree biodiversity score is 2.11 requiring 2.22 SEB points.

Trees 193 and 194 (Clump C)

Trees 193 and 194 identified in Figure 9 are *Melaleuca lanceolata* with an average height of four metres and in moderate condition. The trees exhibit approximately 30% dieback. The trees contained no hollows. The average trunk diameter at 1.0m above the ground is 28cm. The average tree biodiversity score is 0.49 requiring 0.52 SEB points. Total tree biodiversity score for the clump is 0.98 requiring 1.04 SEB points.

Trees 195 to 197 (Clump D)

Trees 195 and 197 identified in Figure 9 are *Melaleuca lanceolata* with an average height of four metres and in moderate condition. The trees exhibit approximately 50% dieback. The trees contained no hollows. The average trunk diameter at 1.0m above the ground is 25cm. The average tree biodiversity score is 0.38 requiring 0.40 SEB points. Total tree biodiversity score for the clump is 1.14 requiring 1.20 SEB points.

Tree 198

Tree 198 identified in Figure 9 is a *Melaleuca lanceolata* with a height of four metres and in moderate condition. The tree exhibits approximately 60% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 27cm. The tree biodiversity score is 0.36 requiring 0.38 SEB points.

Trees 199 to 202 (Clump E)

Trees 199 and 202 identified in Figure 9 are *Melaleuca lanceolata* with an average height of four metres and in good condition. The trees exhibit approximately 20% dieback. The trees contained no hollows. The average trunk diameter at 1.0m above the ground is 29cm. The average tree biodiversity score is 0.55 requiring 0.58 SEB points. Total tree biodiversity score for the clump is 2.20 requiring 2.32 SEB points.

Tree 203

Tree 203 identified in Figure 9 is a *Melaleuca lanceolata* with a height of three metres and in poor condition. The tree exhibits approximately 80% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 32cm. The tree biodiversity score is 0.27 requiring 0.28 SEB points.

Tree 204

Tree 204 identified in Figure 7 is a *Melaleuca lanceolata* with a height of six metres and in good condition. The tree exhibits approximately 10% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 46cm. The tree biodiversity score is 2.40 requiring 2.52 SEB points.

Tree 205

Tree 205 identified in Figure 7 is a *Melaleuca lanceolata* with a height of five metres and in good condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 52cm. The tree biodiversity score is 2.37 requiring 2.49 SEB points.

Trees 206 to 208 (Clump F)

Trees 206 and 208 identified in Figure 7 are *Melaleuca lanceolata* with an average height of five metres and in good condition. The trees exhibit approximately 5% dieback. The trees contained no hollows. The average trunk diameter at 1.0m above the ground is 29cm. The average tree biodiversity score is 1.13 requiring 1.19 SEB points. Total tree biodiversity score for the clump is 3.39 requiring 3.57 SEB points.

Tree 209

Tree 209 identified in Figure 7 is a *Melaleuca lanceolata* with a height of eight metres and in good condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 36cm. The tree biodiversity score is 1.33 requiring 1.40 SEB points.

Trees 210 to 213 (Clump F)

Trees 210 and 213 identified in Figure 7 are *Melaleuca lanceolata* with an average height of five metres and in good condition. The trees exhibit approximately 5% dieback. The trees contained no hollows. The average trunk diameter at 1.0m above the ground is 48cm. The average tree biodiversity score is 2.24 requiring 2.35 SEB points. Total tree biodiversity score for the clump is 8.96 requiring 9.40 SEB points.

Tree 214

Tree 214 identified in Figure 7 is a *Melaleuca lanceolata* with a height of five metres and in good condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 41cm. The tree biodiversity score is 1.96 requiring 2.06 SEB points.

Tree 215

Tree 215 identified in Figure 7 is a *Melaleuca lanceolata* with a height of six metres and in good condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 42cm. The tree biodiversity score is 2.31 requiring 2.43 SEB points.

Tree 216

Tree 216 identified in Figure 7 is a *Melaleuca lanceolata* with a height of six metres and in good condition. The tree exhibits approximately 5% dieback. The tree contained no hollows. The trunk diameter at 1.0m above the ground is 61cm. The tree biodiversity score is 3.70 requiring 3.89 SEB points.

Site maps showing areas of proposed impact

Four site impact maps are presented, each representing one quarter of the proposed pivot irrigator. Trees that have died since the imagery was taken appear unlabelled on the maps.

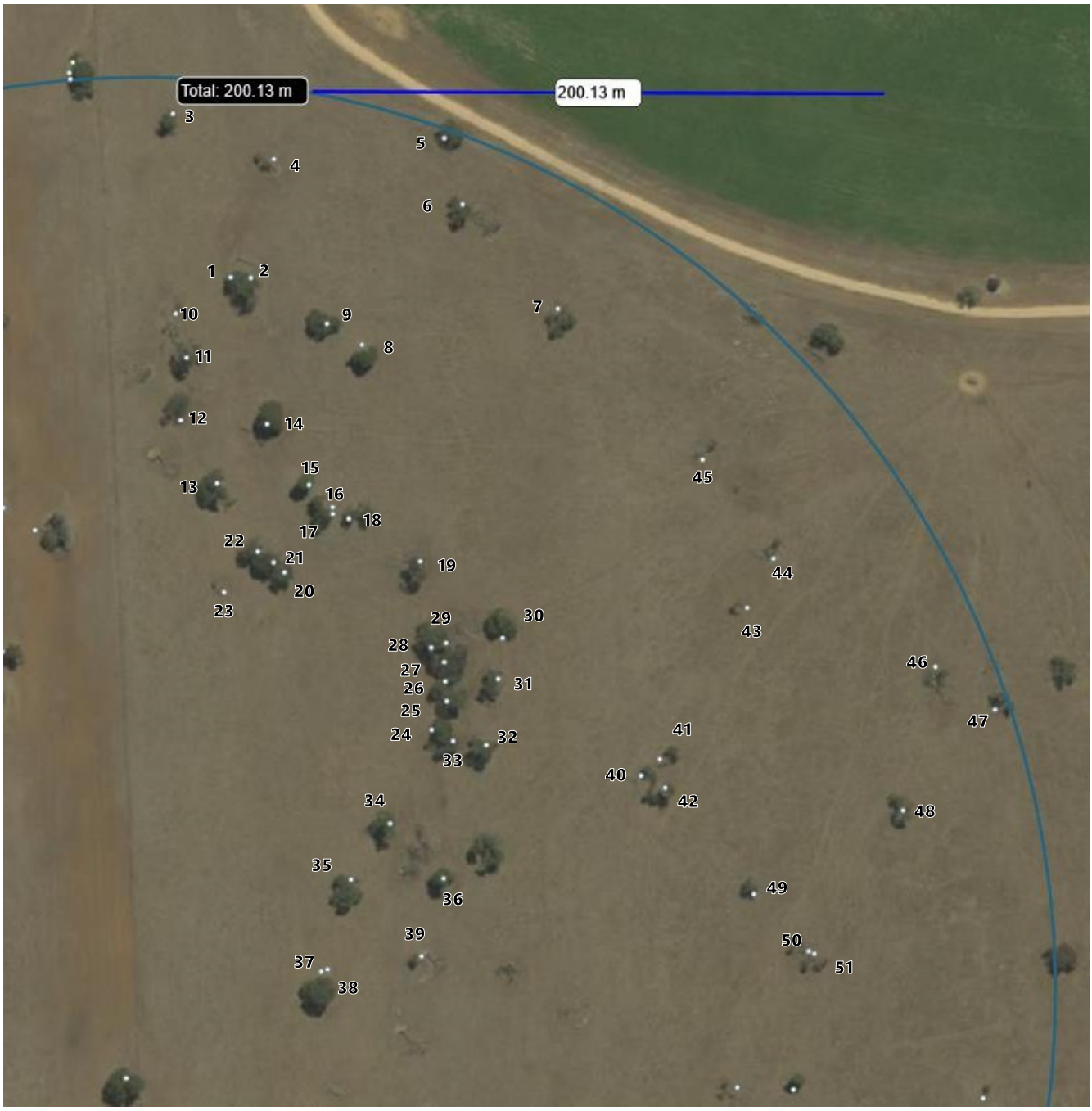

Figure 6. North east quadrant of proposed pivot irrigator. Blue circle is the boundary of the pivot irrigator and the blue dot is its centre. 2013 imagery used for ease of labelling.

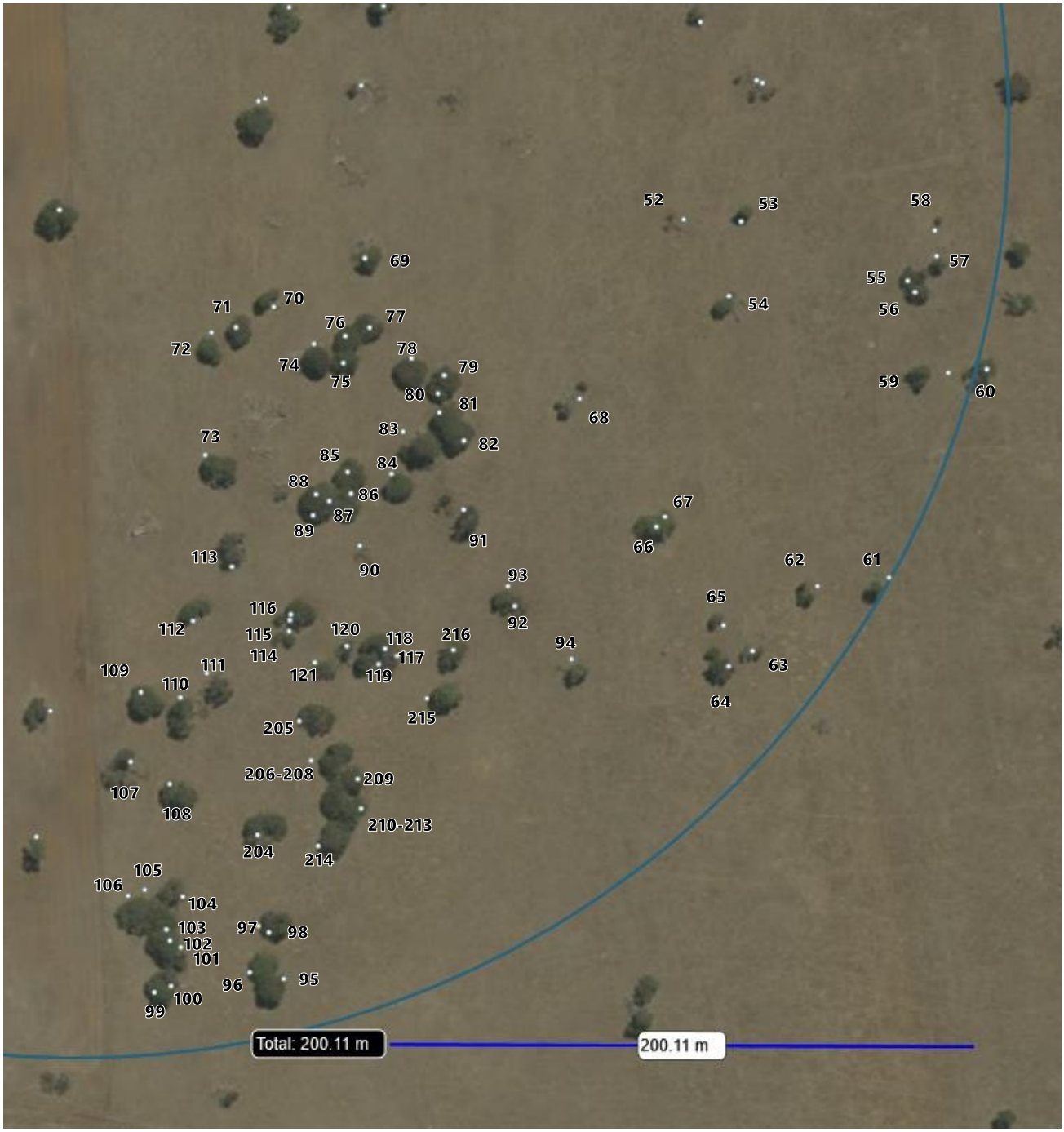

Figure 7. South east quadrant of proposed pivot irrigator. Blue circle is the boundary of the pivot irrigator and the blue dot is its centre. 2013 imagery used for ease of labelling.

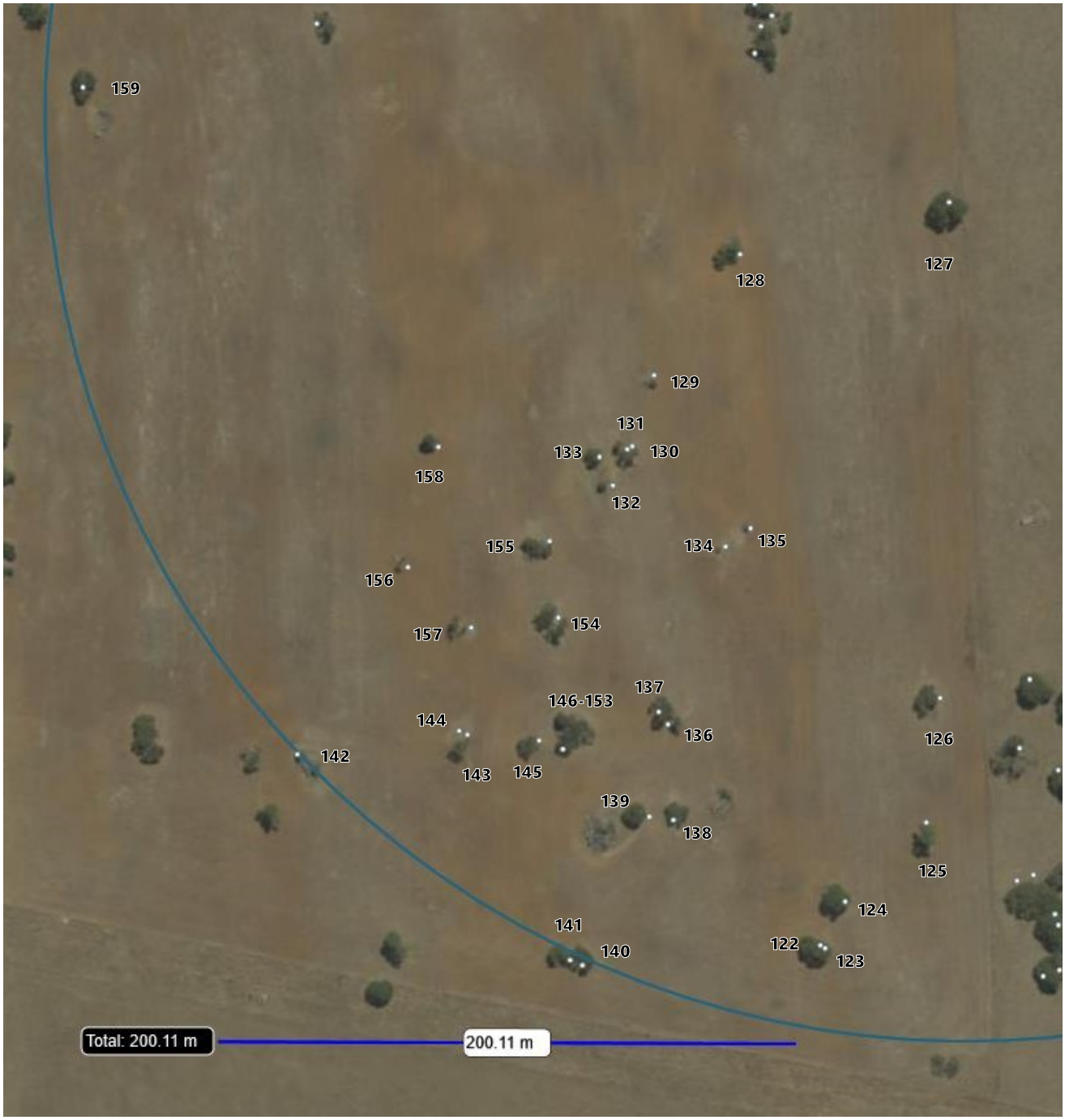

Figure 8. South west quadrant of proposed pivot irrigator. Blue circle is the boundary of the pivot irrigator and the blue dot is its centre. 2013 imagery used for ease of labelling.

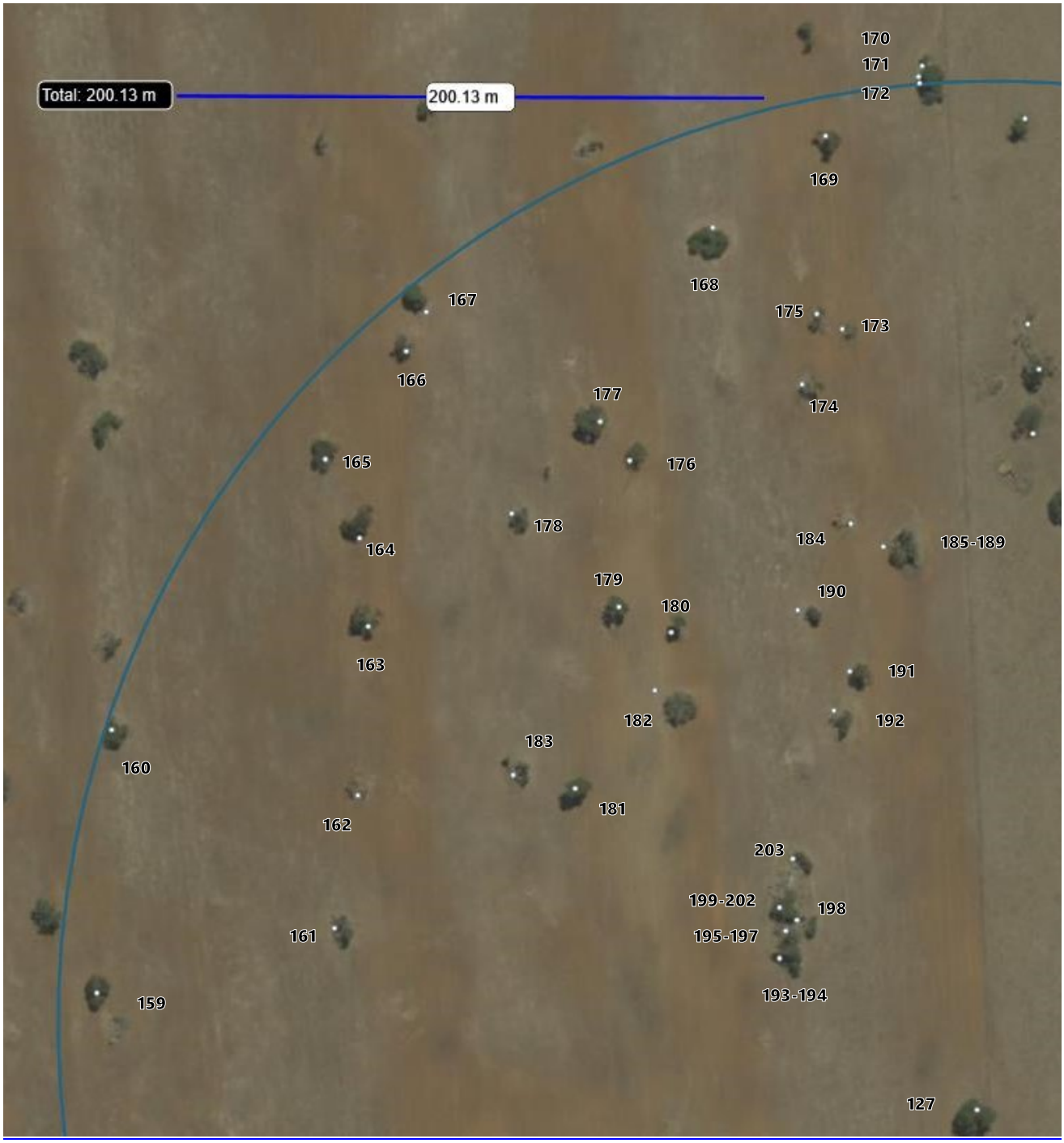

Figure 9. North west quadrant of proposed pivot irrigator. Blue circle is the boundary of the pivot irrigator and the blue dot is its centre. 2013 imagery used for ease of labelling.

4.2 Presence of Substantially Intact Vegetation

If the vegetation is considered to represent a substantially intact stratum, the NVC cannot approve clearance, unless for the purpose of harvesting native vegetation (section 27(3)). For more information see the NVC's Guide for Applications to Clear Native Vegetation.

4.2.1 Provide information on whether the native vegetation constitutes a continuous intact stratum.

The area under the proposed pivot irrigator contains 216 trees and do not constitute a continuous intact stratum of native vegetation. The pre-European vegetation is predicted to have been a *Melaleuca lanceolata* and *Allocasuarina verticillata* Woodland (NatureMaps). Based on South Australian Vegetation Structural Formations (Heard and Channon 1997 in NVC Bushland Assessment Manual 2019) the canopy layer for a Woodland would be expected to achieve 10 – 30% projected foliage cover. The estimated projected foliage cover within the area of the proposed pivot is 1 – 2%.

Four native species were identified in the area under the proposed pivot irrigator, these are;

- *Melaleuca lanceolata* (Dryland Tea Tree)*;*
- *Allocasuarina verticillata* (Drooping Sheoak)*;*
- *Muehlenbeckia gunnii* (Coastal Lignum)*; and*
- *Rytidosperma geniculatum* (Kneed Wallaby-grass).

The two additional native species *Muehlenbeckia gunnii* and *Rytidosperma geniculatum* combined make up less than 1% of the vegetation cover in any given area under the proposed pivot irrigator.

In the benchmark vegetation community (SE 7.3) native plant diversity of 22 – 29 species is considered to be good (Milne and Croft 2012). The area under the proposed pivot irrigator does not contain a similar diversity of plant species as would be expected for the original *Melaleuca lanceolata* and *Allocasuarina verticillata* Woodland.

The trees are not contiguous with a patch of similar vegetation structure.

The ground layer vegetation is comprised almost exclusively of introduced exotic annual pasture species and perennial weeds.

4.2.2 Provide information on whether the native vegetation has been subject to degradation within the past 20 years.

The property has been in the ownership Lake Hawdon Proprietors since 1948. There has been no human induced degradation of the trees in the past 20 years.

Due to shallow soils, tree age and various environmental conditions trees periodically topple over or lose large sections due to natural events, i.e. high wind. In more recent years, these fallen trees have been left where they lie and are not 'tidied up' (Figure 10).

Figure 10. Example of a fallen tree that has been left to break down naturally.

4.2.3 Provide a key finding on whether any or all of the area of impact could be considered as substantially intact – see Guide for Applications to Clear Native Vegetation.

None of the area of impact could be considered as substantially intact.

4.3 Principles of Clearance (Schedule 1, *Native Vegetation Act 1991*)

If the clearance is seriously at variance with one or more of the principles, the NVC cannot approve clearance, however, the Act provides the NVC with a degree of discretion in certain situations - see Guide for Applications to Clear Native Vegetation.

Principle a) it comprises a high level of diversity of plant species (patches of vegetation only).
Not applicable.
Not at variance.

Principle b) it has significance as a habitat for wildlife.
Database searches identified potential threatened species may occur in the area and therefore utilise the trees as habitat (Table 1). Table 1 identifies one species listed as Vulnerable under the NP&W Act 1972 (Blue-winged Parrot) and two species that are listed as regionally uncommon.

Removal of scattered trees that could provide habitat for Vulnerable species listed under the NP&W Act is **Seriously at Variance** with this principle.

Moderating factors

Impact Significance

Whilst the proposed clearance area contains a large number of trees it is unlikely their removal would lead to a long-term decline in the Blue-winged parrot's population. The remainder of the property, primarily along the broad ridgeline, contains similar trees which are generally in higher densities than the area proposed to be cleared. Many of these remaining trees occur on the eastern side of the ridgeline where wind speed is reduced. The higher density of trees combined with lower wind speed is likely to result in the long-term with less of these trees being damaged by high winds compared to the area under proposed pivot. The owner values these additional trees and has no desire to see any removed in the future. Patches of *Eucalyptus obliqua* (messmate stringybark) and *Eucalyptus leucoxylon* (SA Blue Gum) also occur on the eastern side of the ridgeline.

Significant Benefit

In addition to the remaining trees on the ridgeline, approximately 11 hectares of *Melaleuca lanceolata* Low Open Woodland comprises part of the proposed SEB for the clearance of the 216 trees. This woodland is part of a contiguous 25-hectare patch of bushland, including 4.5 hectares of Endangered *Leptospermum lanigerum* Tall Shrubland. The total proposed SEB is 70.432 hectares.

Considering the Impact Significance and Significant Benefit the trees do not provide essential habitat for Blue-winged Parrots and it is recommended the clearance be moderated to **At Variance** with this principle**.**

Principle c) it includes plants of a rare, vulnerable or endangered species.
The four native plant species identified within the area of the proposed pivot are not listed as threatened species under the EPBC Act, NPW Act and are not considered regionally uncommon.

The clearance proposal is considered to be Not at Variance with this principle.

Principle d) the vegetation comprises the whole, or a part, of a plant community that is rare, vulnerable or endangered (patches of vegetation only).
The vegetation does not comprise the whole, or part, of a threatened plant community.

The clearance proposal is considered to be Not at Variance with this principle.

Principle e) it is significant as a remnant of vegetation in an area which has been extensively cleared.

Remnancy within the Lake Hawdon IBRA Association is 8% and the Bridgewater IBRA sub-region is 14%. For assessment of scattered trees against this principle remnancy between 1 – 10% in either classification is considered to be At Variance with this principle.

The trees are sparsely arranged across the area and attain a projected foliage cover of 1-2%. The benchmark for the original vegetation community, *Melaleuca lanceolata* and *Allocasuarina verticillata* Woodland, is 10–30% protect foliage cover. The tree density is considerably less than a similar area in good condition.

Melaleuca lanceolata and *Allocasuarina verticillata* Woodland is not considered to be rare or threatened.

The trees range in health from very poor to excellent. Tree biodiversity scores ranged from 0.19 to 6.68,

- 41 (19.0%) trees scored between 0.19 and 0.99,
- 54 (25.0%) trees scored between 1.00 and 1.99,
- 56 (25.9%) trees scored between 2.00 and 2.99,
- 38 (17.6%) trees scored between 3.00 and 3.99,
- 16 (7.4%) trees scored between 4.00 and 4.99,
- 2 (0.9%) trees scored between 5.00 and 5.99, and
- 9 (4.2%) trees scored between 6.00 and 6.99.

The clearance proposal is considered to be **At Variance** with this principle.

Principle f) it is growing in, or in association with, a wetland environment.

The area of the proposed pivot irrigator is on top of a ridgeline. There are no wetlands recorded on the ridgeline. The closest listed wetland (S0108313) according to NatureMaps data is 600m north west of the site. Wetland S0108313 has an Environmental Assessment Value of *No Data* and a Decision Description of *Unknown ecological values, spatial unit has low to moderate naturalness and connectivity values*.

The clearance proposal is considered to be Not at Variance with this principle.

Principle g) it contributes significantly to the amenity of the area in which it is growing or is situated.

The trees impacted by this clearance proposal are not located near a township nor a recognised tourist route. The removal of these trees would not significantly change the landscape character of the area.

The clearance proposal is considered to be Not at Variance with this principle.

***Principles of Clearance* (h-m) will be considered by comments provided by the local NRM Board or relevant Minister. The Data Report should contain information on these principles where relevant and where sufficient information or expertise is available.**

Summary

The clearance proposal is not at variance with five of the Principles of Clearance. However, it is **Seriously At Variance** with Principles (b) Wildlife Habitat and **At Variance** with Principle (e) Significant as a remnant.

Clearance of trees that could potentially provide habitat for the NPW Act listed Blue-winged Parrot (Vulnerable) are assessed as being Seriously at Variance. However, in this case with moderating factors the assessment is recommended to be reduced to At Variance . No EPBC Act listed species were found that could use the trees for habitat.

The proposed clearance is to occur within the Lake Hawdon IBRA Association, which has 8% remnancy of its original vegetation. An IBRA Association with remnancy of 10% or less is considered to be extensively cleared. Due to the proposed clearance occurring in an area which has been extensively cleared of native vegetation the assessment was determined to be At Variance.

Table 2. Summary of the assessment against each Principle of Clearance.

Principle of Clearance	**Assessment**
a) Plant diversity	Not Applicable
b) Wildlife habitat	**Seriously At Variance**
c) Threatened plants	Not at Variance
d) Threatened Vegetation Community	Not at Variance
e) Significant as a remnant	**At Variance**
f) In association with a wetland	Not at Variance
g) Amenity value	Not at Variance

The owner has investigated alternative sites in which to install a pivot irrigator that would impact fewer trees (Figures 1 - 3). However, no alternative sites have proven to be appropriate due to;

- Poor quality water with high salts content (6000ppm);
- Marginal water quality with high salts content (3000 – 3500ppm) that makes irrigation unreliable;
- Shallow soil on increased slopes, leading to high likelihood of water erosion under irrigation; and
- Large areas of exposed sheet rock, leading to high likelihood of water erosion under irrigation.

A pivot irrigator smaller than 32 hectares was investigated, but determined to be economically unviable for pasture production.

5. Significant Environmental Benefit

A Significant Environmental Benefit (SEB) is required for approval to clear under Section 28 of the *Native Vegetation Act 1991*. The NVC must be satisfied that as a result of the loss of vegetation from the clearance that an SEB will result in a positive impact on the environment that is over and above the negative impact of the clearance.

The Data Report must propose how the SEB will be achieved in accordance with the SEB Policy and Guide, by providing the following information.

DETERMINATION OF THE SEB OBLIGATION

Clearance Area

Table 3. Summary table of trees proposed for clearance.

Tree Number	Species	Biodiversity Score	SEB Points
1	*Melaleuca lanceolata*	3.93	4.13
2	*Melaleuca lanceolata*	3.76	3.94
3	*Melaleuca lanceolata*	3.48	3.65
4	*Melaleuca lanceolata*	0.32	0.33
5	*Melaleuca lanceolata*	3.40	3.57
6	*Melaleuca lanceolata*	2.45	2.57
7	*Melaleuca lanceolata*	3.66	3.85
8	*Melaleuca lanceolata*	3.53	3.71
9	*Melaleuca lanceolata*	2.58	2.71
10	*Allocasuarina verticillata*	0.19	0.19
11	*Allocasuarina verticillata*	6.43	6.75
12	*Allocasuarina verticillata*	2.45	2.58
13	*Melaleuca lanceolata*	4.77	5.01
14	*Melaleuca lanceolata*	6.15	6.46
15	*Melaleuca lanceolata*	3.96	4.15
16	*Melaleuca lanceolata*	2.27	2.38
17	*Melaleuca lanceolata*	2.35	2.47
18	*Melaleuca lanceolata*	6.37	6.69
19	*Melaleuca lanceolata*	3.57	3.75
20	*Melaleuca lanceolata*	3.31	3.48
21	*Melaleuca lanceolata*	3.40	3.57
22	*Melaleuca lanceolata*	3.74	3.93
23	*Melaleuca lanceolata*	0.52	0.55
24	*Melaleuca lanceolata*	2.31	2.43
25	*Melaleuca lanceolata*	4.16	4.36
26	*Melaleuca lanceolata*	1.04	1.09
27	*Melaleuca lanceolata*	2.56	2.68
28	*Melaleuca lanceolata*	3.54	3.72
29	*Melaleuca lanceolata*	3.97	4.16
30	*Melaleuca lanceolata*	2.31	2.42
31	*Melaleuca lanceolata*	3.72	3.90
32	*Melaleuca lanceolata*	6.68	7.02
33	*Melaleuca lanceolata*	2.60	2.73
34	*Melaleuca lanceolata*	4.37	4.59
35	*Melaleuca lanceolata*	2.51	2.63
36	*Melaleuca lanceolata*	4.74	4.98
37	*Melaleuca lanceolata*	1.32	1.39
38	*Melaleuca lanceolata*	5.98	6.28
39	*Melaleuca lanceolata*	0.26	0.28
40	*Melaleuca lanceolata*	0.40	0.43
41	*Melaleuca lanceolata*	0.35	0.37
42	*Melaleuca lanceolata*	4.57	4.80
43	*Melaleuca lanceolata*	1.38	1.45
44	*Melaleuca lanceolata*	0.56	0.59
45	*Melaleuca lanceolata*	0.56	0.59
46	*Melaleuca lanceolata*	0.61	0.64
47	*Melaleuca lanceolata*	0.42	0.44
48	*Melaleuca lanceolata*	2.54	2.67
49	*Melaleuca lanceolata*	2.15	2.25
50	*Melaleuca lanceolata*	0.20	0.21
51	*Melaleuca lanceolata*	0.55	0.58
52	*Melaleuca lanceolata*	0.41	0.43
53	*Melaleuca lanceolata*	2.26	2.37
54	*Melaleuca lanceolata*	2.20	2.31
55	*Melaleuca lanceolata*	2.18	2.28
56	*Melaleuca lanceolata*	3.34	3.51

57	*Melaleuca lanceolata*	1.33	1.39
58	*Melaleuca lanceolata*	0.33	0.35
59	*Melaleuca lanceolata*	4.02	4.23
60	*Melaleuca lanceolata*	3.74	3.93
61	*Melaleuca lanceolata*	3.79	3.98
62	*Melaleuca lanceolata*	2.53	2.65
63	*Melaleuca lanceolata*	1.36	1.43
64	*Melaleuca lanceolata*	3.55	3.73
65	*Melaleuca lanceolata*	2.41	2.53
66	*Melaleuca lanceolata*	3.52	3.70
67	*Melaleuca lanceolata*	2.54	2.67
68	*Melaleuca lanceolata*	0.61	0.64
69	*Melaleuca lanceolata*	3.59	3.77
70	*Melaleuca lanceolata*	2.50	2.62
71	*Melaleuca lanceolata*	1.93	2.03
72	*Melaleuca lanceolata*	3.38	3.55
73	*Melaleuca lanceolata*	6.35	6.67
74	*Melaleuca lanceolata*	3.77	3.96
75	*Melaleuca lanceolata*	1.42	1.50
76	*Melaleuca lanceolata*	1.95	2.04
77	*Melaleuca lanceolata*	1.97	2.07
78	*Melaleuca lanceolata*	3.52	3.70
79	*Melaleuca lanceolata*	2.00	2.10
80	*Melaleuca lanceolata*	1.15	1.21
81	*Melaleuca lanceolata*	2.23	2.34
82	*Melaleuca lanceolata*	6.41	6.73
83	*Melaleuca lanceolata*	6.61	6.94
84	*Melaleuca lanceolata*	1.22	1.28
85	*Melaleuca lanceolata*	2.35	2.47
86	*Melaleuca lanceolata*	2.13	2.23
87	*Melaleuca lanceolata*	3.96	4.16
88	*Melaleuca lanceolata*	3.55	3.72
89	*Melaleuca lanceolata*	0.53	0.56
90	*Melaleuca lanceolata*	0.59	0.62
91	*Melaleuca lanceolata*	5.94	6.24
92	*Melaleuca lanceolata*	1.19	1.25
93	*Melaleuca lanceolata*	1.24	1.30
94	*Melaleuca lanceolata*	1.99	2.09
95	*Melaleuca lanceolata*	2.13	2.23
96	*Melaleuca lanceolata*	1.93	2.03
97	*Melaleuca lanceolata*	1.39	1.46
98	*Melaleuca lanceolata*	3.32	3.49
99	*Melaleuca lanceolata*	2.01	2.11
100	*Melaleuca lanceolata*	2.24	2.36
101	*Melaleuca lanceolata*	1.09	1.14
102	*Melaleuca lanceolata*	4.74	4.97
103	*Melaleuca lanceolata*	1.40	1.47
104	*Melaleuca lanceolata*	1.18	1.24
105	*Melaleuca lanceolata*	1.40	1.48
106	*Melaleuca lanceolata*	1.97	2.07
107	*Melaleuca lanceolata*	3.93	4.13
108	*Melaleuca lanceolata*	3.71	3.89
109	*Melaleuca lanceolata*	4.86	5.10
110	*Melaleuca lanceolata*	6.37	6.68
111	*Melaleuca lanceolata*	3.40	3.57
112	*Melaleuca lanceolata*	2.15	2.26
113	*Melaleuca lanceolata*	4.50	4.72
114	*Melaleuca lanceolata*	1.09	1.14
115	*Melaleuca lanceolata*	1.32	1.39
116	*Melaleuca lanceolata*	1.16	1.22
117	*Melaleuca lanceolata*	2.56	2.68
118	*Melaleuca lanceolata*	3.43	3.60
119	*Melaleuca lanceolata*	4.34	4.56
120	*Allocasuarina verticillata*	1.36	1.43
121	*Melaleuca lanceolata*	0.60	0.63
122	*Melaleuca lanceolata*	0.37	0.39
123	*Melaleuca lanceolata*	2.61	2.74
124	*Melaleuca lanceolata*	3.73	3.92
125	*Melaleuca lanceolata*	4.61	4.84
126	*Melaleuca lanceolata*	2.02	2.13
127	*Melaleuca lanceolata*	6.07	6.37
128	*Melaleuca lanceolata*	4.57	4.80
129	*Melaleuca lanceolata*	0.27	0.28
130	*Melaleuca lanceolata*	2.00	2.10
131	*Melaleuca lanceolata*	0.47	0.49
132	*Melaleuca lanceolata*	0.46	0.48
133	*Melaleuca lanceolata*	2.18	2.28
134	*Melaleuca lanceolata*	0.42	0.44
135	*Allocasuarina verticillata*	0.48	0.51
136	*Melaleuca lanceolata*	2.28	2.40
137	*Melaleuca lanceolata*	1.31	1.38
138	*Melaleuca lanceolata*	2.33	2.44
139	*Melaleuca lanceolata*	1.32	1.39
140	*Melaleuca lanceolata*	2.36	2.48
141	*Melaleuca lanceolata*	1.37	1.44
142	*Melaleuca lanceolata*	0.31	0.32
143	*Melaleuca lanceolata*	1.97	2.07
144	*Melaleuca lanceolata*	0.34	0.36
145	*Melaleuca lanceolata*	1.15	1.21
146	*Melaleuca lanceolata*	1.20	1.26
147	*Melaleuca lanceolata*	1.20	1.26

148	*Melaleuca lanceolata*	1.20	1.26
149	*Melaleuca lanceolata*	1.20	1.26
150	*Melaleuca lanceolata*	1.20	1.26
151	*Melaleuca lanceolata*	1.20	1.26
152	*Melaleuca lanceolata*	1.20	1.26
153	*Melaleuca lanceolata*	1.20	1.26
154	*Melaleuca lanceolata*	3.44	3.61
155	*Melaleuca lanceolata*	2.17	2.28
156	*Melaleuca lanceolata*	2.27	2.39
157	*Melaleuca lanceolata*	2.03	2.13
158	*Melaleuca lanceolata*	2.25	2.36
159	*Melaleuca lanceolata*	3.85	4.04
160	*Melaleuca lanceolata*	2.48	2.61
161	*Melaleuca lanceolata*	0.38	0.40
162	*Melaleuca lanceolata*	1.14	1.20
163	*Melaleuca lanceolata*	4.16	4.37
164	*Melaleuca lanceolata*	3.72	3.90
165	*Melaleuca lanceolata*	2.40	2.52
166	*Melaleuca lanceolata*	2.13	2.24
167	*Melaleuca lanceolata*	2.40	2.52
168	*Melaleuca lanceolata*	2.25	2.36
169	*Melaleuca lanceolata*	3.72	3.91
170	*Melaleuca lanceolata*	1.26	1.33
171	*Melaleuca lanceolata*	2.37	2.49
172	*Melaleuca lanceolata*	0.48	0.50
173	*Melaleuca lanceolata*	1.11	1.17
174	*Melaleuca lanceolata*	1.98	2.08
175	*Melaleuca lanceolata*	1.14	1.19
176	*Melaleuca lanceolata*	3.97	4.17
177	*Melaleuca lanceolata*	2.16	2.27
178	*Melaleuca lanceolata*	2.23	2.34
179	*Melaleuca lanceolata*	4.46	4.68
180	*Melaleuca lanceolata*	3.62	3.80
181	*Melaleuca lanceolata*	1.01	1.06
182	*Melaleuca lanceolata*	4.47	4.69
183	*Melaleuca lanceolata*	0.55	0.57
184	*Melaleuca lanceolata*	2.59	2.72
185	*Melaleuca lanceolata*	1.02	1.07
186	*Melaleuca lanceolata*	1.02	1.07
187	*Melaleuca lanceolata*	1.02	1.07
188	*Melaleuca lanceolata*	1.02	1.07
189	*Melaleuca lanceolata*	1.02	1.07
190	*Melaleuca lanceolata*	0.59	0.62
191	*Melaleuca lanceolata*	4.28	4.49
192	*Melaleuca lanceolata*	2.11	2.22
193	*Melaleuca lanceolata*	0.49	0.52
194	*Melaleuca lanceolata*	0.49	0.52
195	*Melaleuca lanceolata*	0.38	0.40
196	*Melaleuca lanceolata*	0.38	0.40
197	*Melaleuca lanceolata*	0.38	0.40
198	*Melaleuca lanceolata*	0.36	0.38
199	*Melaleuca lanceolata*	0.55	0.58
200	*Melaleuca lanceolata*	0.55	0.58
201	*Melaleuca lanceolata*	0.55	0.58
202	*Melaleuca lanceolata*	0.55	0.58
203	*Melaleuca lanceolata*	0.27	0.28
204	*Melaleuca lanceolata*	2.40	2.52
205	*Melaleuca lanceolata*	2.37	2.49
206	*Melaleuca lanceolata*	1.13	1.19
207	*Melaleuca lanceolata*	1.13	1.19
208	*Melaleuca lanceolata*	1.13	1.19
209	*Melaleuca lanceolata*	1.33	1.40
210	*Melaleuca lanceolata*	2.24	2.35
211	*Melaleuca lanceolata*	2.24	2.35
212	*Melaleuca lanceolata*	2.24	2.35
213	*Melaleuca lanceolata*	2.24	2.35
214	*Melaleuca lanceolata*	1.96	2.06
215	*Melaleuca lanceolata*	2.31	2.43
216	*Melaleuca lanceolata*	3.70	3.89
TOTAL		**498.41**	**523.33**

Total Biodiversity Score: 498.41

Total SEB points Required: 523.33

ACHIEVING AN SEB

Indicate how the SEB will be achieved by ticking the appropriate box:

☒ Establish a new SEB Area on land owned by the proponent.

☒ Use SEB Credit that the proponent has established. Provide the SEB Credit Ref. No. 2010_2027

FOR AN ON-GROUND SEB

If a proponent proposes to achieve the SEB on-ground, the following information must be provided:

Ownership:	Lake Hawdon Proprietors		
Site Address:	648 Lake Hawdon Road, Bray 5276		
Local Government Area:	District Council of Robe	Hundred:	Bray
Title Details:	CT/5930/440 CT/5930/440 CT/6208/875 CT/5570/283 CT/5570/283 CT/5570/283	Section:	H440200 S136 H440200 S137 D118627 A10 H440200 S56 H440200 S59 H440200 S78

Summary information for proposed on-ground SEB

All proposed on-ground SEB sites were assessed using the NVC Bushland Assessment Method over three days;

- Sites A1 – A3 and Sites B1 and B2 were assessed on 8 May 2019;
- Sites B3 and B4 were assessed on 6 June 2019; and
- Sites B5, C1, D1, E1 and F1 were assessed on 14 February 2020.

Figure 12 identifies the location of all SEB sites.

Table 4 provides a summary of key criteria for the proposed on-ground SEB.

Table 4. Summary table of on-ground SEB information.

Site	Area (ha)	Unit Biodiversity Score	Gain Score	SEB points	Vegetation Community
A1	21.286	48.67	8.49	180.75	*Gahnia trifida* Sedgeland
A2	1.646	35.16	7.71	12.68	*Melaleuca brevifolia* Tall Open Shrubland over *Gahnia trifida*
A3	8.453	36.45	6.56	55.49	*Melaleuca brevifolia* Open Shrubland over *Gahnia trifida*
B1	4.959	77.76	7.94	39.39	*Leptospermum lanigerum* Tall Shrubland over *Gahnia trifida* with emergent *Eucalyptus ovata*
B2	8.449	42.19	6.66	56.27	*Melaleuca lanceolata* +/- *Eucalyptus ovata* Low Open Woodland with over *Acacia paradoxa*
B3	4.258	78.16	7.91	33.70	*Leptospermum lanigerum, Acacia longifolia* ssp. *sophorae* and *Ozothamnus ferrugineus* Tall Shrubland +/- *Eucalyptus ovata* over *Gahnia trifida*
B4	4.95	93.83	6.27	31.04	*Gahnia trifida* Sedgeland with emergent *Leptospermum lanigerum, Acacia longifolia* ssp. *sophorae* and *Ozothamnus ferrugineus*
B5	2.662	24.03	5.67	15.09	*Melaleuca lanceolata* Low Open Woodland over *Austrostipa* sp., *Rytidosperma* sp. and exotic grasses and herbs.
C1	4.12	46.44	6.72	27.71	*Eucalyptus ovata* Open Woodland over *Acacia leiophylla* over *Austrostipa* sp., *Rytidosperma* sp. and exotic grasses and herbs
D1	2.84	16.25	4.59	13.04	*Eucalyptus obliqua* Open Woodland over *Pteridium esculentum, Phalaris aquatica* and *Bromus diandrus*
E1	1.428	66.27	7.88	11.25	*Eucalyptus ovata* Open Forest over *Muehlenbeckia gunnii* and *Pteridium esculentum*
F1	5.381	74.85	8.75	47.06	*Gahnia trifida* and *Baumea juncea* Sedgeland over *Festuca arundinacea, Holcus lanatus* and *Scabiosa atropurpurea*.
TOTAL	**70.432**			**523.47**	
SEB Required				**523.33**	

Figure 10. Overall map of SEB sites. Blue circle denotes location of proposed vegetation clearance.

(All SEB images and maps are provided in a separate document; *Hurst SEB Images.pdf*)

Provide relevant background information relating to the proposed SEB Area. Include land use history, management actions or encumbrances.

The proposed SEB Area is made of up of five distinct areas, comprising 12 Sites (Figure 12);

- Block A with Sites A1 – A3;
- Block B with Sites B1 – B5;
- Site C1;
- Site D1;
- Site E1; and
- Site F1.

All sites except those located within Block B have been owned since the original purchase in 1948. From this time, they have been incorporated into to the grazing regime (sheep and cattle) of the property. The grazing regime has enabled these areas to retain their currently level of native vegetation. The nature of stock access and the vegetation present has resulted in considerable variation in the quality of native vegetation across the sites. For example, stock access to Block A has been limited to encourage retention of the *Gahnia trifida*. Site E1 has been fenced from stock for over 15 years and was used a family picnic area, with the large, deep waterholes providing particular enjoyment.

Block A was included in a seismic survey over 17 years ago with the survey lines still evident through the vegetation.

Block B was purchased approximately three years ago and is part of land parcel CT/6208/875. Previously, stock had access to Block B via an unfenced southern boundary. When the owner took ownership of the land, stock were excluded from the area with fencing.

Most of the sites are located on a large flat plain that extends across the landscape. Soils in on these sites are variable, but generally consist of a shallow a loam over limestone rock. Site D1 is on the eastern side of a raised ridgeline (southern extension of West Dairy Range) and contains deeper soil consisting of sandy loam.

One site contains an existing encumbrance. Site C1 is located within a previous on-ground SEB (2010_2027) where additional land was set aside than required resulting in an SEB Credit of 4.12 hectares.

Management actions for the proposed SEB Area will include;

- fencing to exclude stock from all sites;
- weed management targeting those with potential to degrade the sites and impede improvement of ecological values;
- revegetation of key strata in some sites;
- snail control in sites with revegetation;
- rabbit and fox control;
- grazing management of kangaroos when numbers attain levels that impact regeneration and recovery of the sites; and
- monitoring for new weeds that may emerge.

Provide a description of the vegetation (vegetation associations, dominant species, significant weeds, threatened species and general description of the condition).

Site A1 *Gahnia trifida* Sedgeland

Site A1 is 21.286 hectares located on a flat plain of shallow loam over limestone. The dominant species are *Gahnia trifida* (Cutting Grass) with minor occurrences of *Gahnia filum* (Thatching Grass), *Rytidosperma* spp. (Wallaby-grass) and *Oxalis perennans* (Native Sorrel). The most significant weed impacting the site is *Phalaris aquatica* (Phalaris). Other common weeds include, *Cirsium vulgare* (Spear Thistle), *Hirschfeldia incana* (Buchan Weed) and a range of smaller herbs and annual grasses. A small number of *Marrubium vulgare* (Horehound) are scattered in some of the more open areas.

Site A1 represents an example of a State (Provisional List of Threatened Ecosystems of SA) Endangered community.

No threatened flora or fauna species were observed during the site assessment. However, a database search identified four NPW Act listed species (

Table 17) within a five-kilometre radius that could potentially utilise Site A1 for habitat.

Overall, Site A1 is in moderate condition showing the impacts from regular stock access, which may contribute to the non-recovery of old seismic survey lines.

Table 5 provides a summary of key attributes for Site A1. GPS reference location: 411790 5881453.

Table 5. Summary table of Site A1 attributes.

Area	21.286
Vegetation Condition Score	31.67
Threatened Ecological Community Score	1.30

Threatened Fauna Score	0.06
Unit Biodiversity Score	48.67
Gain Score	8.49
SEB Points	180.75

Site A2 *Melaleuca brevifolia* Tall Open Shrubland over *Gahnia trifida*

Site A2 is 1.646 hectares located on a flat plain of shallow loam over limestone. The dominant species are *Melaleuca brevifolia* (Short-leaf Honey-myrtle) and *Gahnia trifida* (Cutting Grass) with minor occurrences of *Gahnia filum* (Thatching Grass) and *Rytidosperma* spp. (Wallaby-grass) with large, dense patches of *Geranium* sp. (Geranium) and *Acaena novae-zelandiae* (Biddy-biddy). The most significant weed impacting the site is *Phalaris aquatica* (Phalaris). Other weeds include, *Cirsium vulgare* (Spear Thistle) and *Cynosurus echinatus* (Rough Dog's-tail Grass) plus a range of smaller herbs.

No threatened species flora or fauna were observed during the site assessment. However, a database search identified four NPW Act listed species (

Table 17) within a five kilometre radius that could potentially utilise Site A2 for habitat.

Overall, Site A2 is in moderate to poor condition.

Table 6 provides a summary of key attributes for Site A2. GPS reference point: 412912 5882523.

Table 6. Summary table of Site A2 attributes.

Area	1.646
Vegetation Condition Score	22.88
Threatened Ecological Community Score	1.00
Threatened Fauna Score	0.06
Unit Biodiversity Score	35.16
Gain Score	7.71
SEB Points	12.68

Site A3 *Melaleuca brevifolia* Open Shrubland over *Gahnia trifida*

Site A3 is 8.453 hectares located on a flat plain of shallow loam over limestone. The dominant species are *Melaleuca brevifolia* (Short-leaf Honey-myrtle) and *Gahnia trifida* (Cutting Grass) with minor occurrences of *Rytidosperma* spp. (Wallaby-grass) and *Hakea rugosa* (Dwarf Hakea). This vegetation community represents the expansion of Site A2 into Site A1 with most of the *Melaleuca brevifolia* between 50cm and 1.5m. The most significant weed impacting the site is *Phalaris aquatica* (Phalaris). Other weeds are small and relatively sparse including, *Cynosurus echinatus* (Rough Dog's-tail Grass), *Leontodon saxatilis* (Lesser Hawkbit) and *Hypochaeris glabra* (Rough Cat's Ear). Minor occurrences of *Hirschfeldia incana* (Buchan Weed) was also present.

No threatened species flora or fauna were observed during the site assessment. However, a database search identified four NPW Act listed species (

Table 17) within a five kilometre radius that could potentially utilise Site A3 for habitat.

Overall, Site A3 is in moderate condition.

Table 7 provides a summary of key attributes for Site A3. GPS reference point: 412355 5882149.

Table 7. Summary table of Site A3 attributes.

Area	8.453
Vegetation Condition Score	30.43
Threatened Ecological Community Score	1.00

Threatened Fauna Score	0.06
Unit Biodiversity Score	36.45
Gain Score	6.56
SEB Points	55.49

Site B1 *Leptospermum lanigerum* Tall Shrubland over *Gahnia trifida* with emergent *Eucalyptus ovata*

Site B1 is 4.959 hectares located on a very gentle slope between the area of proposed clearance (approximately 10m altitude) to Lake Hawdon South 1.7km to the north west. The soil comprises a shallow loam over limestone. The dominant species are *Leptospermum lanigerum* (Silky Tea-tree), *Leucopogon parviflorus* (Coast Beard-heath), and *Ozothamnus ferrugineus* (Tree Everlasting). The understory vegetation contains a large number of herbaceous species. The most significant weeds impacting the site are *Acacia longifolia* ssp. *sophorae* (Coastal Wattle) and *Asparagus asparagoides* (Bridal Creeper). Other weeds include, *Holcus lanatus* (Yorkshire Fog), *Rosa rubiginosa* (Sweet Briar), *Galium aparine* (Cleavers) and *Solanum nigrum* (Black Nightshade).

Site B1 represents an example of a State (Provisional List of Threatened Ecosystems of SA) Endangered community.

No threatened species flora were observed during the site assessment. One NPW Act listed species was observed during the site assessment: Swamp Wallaby (*Wallabia bicolor*). A database search identified a further seven NPW Act listed species (

Table 17) within a five kilometre radius that could potentially utilise Site B1 for habitat.

Overall, Site B1 is in moderate to good condition.

Table 8 provides a summary of key attributes for Site B1. GPS reference point: 410106 5876504.

Table 8. Summary table of Site B1 attributes.

Area	4.959
Vegetation Condition Score	50.31
Threatened Ecological Community Score	1.30
Threatened Fauna Score	0.08
Unit Biodiversity Score	77.76
Gain Score	7.94
SEB Points	39.39

Site B2 *Melaleuca lanceolata +/- Eucalyptus ovata* Low Open Woodland over *Acacia paradoxa*

Site B2 is 8.449 hectares located on a flat plain of shallow loam over limestone. The dominant species are *Melaleuca lanceolata* (Dryland Tea-tree), *Eucalyptus ovata* (Swamp Gum) and *Acacia paradoxa* (Kangaroo Thorn) with *Banksia marginata* (Silver Banksia) and *Leucopogon parviflorus* (Coast Beard-heath). A wide range of native grasses and herbs are also present. The most significant weeds impacting the site are *Acacia longifolia* ssp. *sophorae* (Coastal Wattle) and *Asparagus asparagoides* (Bridal Creeper). Other weeds include, *Holcus lanatus* (Yorkshire Fog), *Rosa rubiginosa* (Sweet Briar), *Galium aparine* (Cleavers) and *Solanum nigrum* (Black Nightshade). Other weeds include, *Scabiosa atropurpurea* (Pincushion), *Cirsium vulgare* (Spear Thistle) and *Phalaris aquatica* (Phalaris) plus a range of smaller herbs.

There is significant grazing pressure on Site B1 likely due to abundant kangaroos and rabbits. Natural regeneration has been prevented with many large shrub species reduced to groundcovers.

No threatened species flora or fauna were observed during the site assessment. However, a database search identified six NPW Act listed species (

Table 17) within a five kilometre radius that could potentially utilise Site B2 for habitat.

Overall, Site B2 is in moderate condition.

Table 9 provides a summary of key attributes for Site B2. GPS reference point: 410209 5876373.

Table 9. Summary table of Site B2 attributes.

Area	8.449
Vegetation Condition Score	35.53
Threatened Ecological Community Score	1.00
Threatened Fauna Score	0.06
Unit Biodiversity Score	42.19
Gain Score	6.66
SEB Points	56.27

Site B3 *Leptospermum lanigerum, Acacia longifolia* ssp. *sophorae* and *Ozothamnus ferrugineus* Tall Shrubland+/- emergent *Eucalyptus ovata* over *Gahnia trifida*

Site B3 is 4.258 hectares located on a very gentle slope between the area of proposed clearance (approximately 10m altitude) to Lake Hawdon South 1.7km to the north west. The soil comprises a shallow loam over limestone. The dominant species are *Leptospermum lanigerum* (Silky Tea-tree), *Acacia longifolia* ssp. *sophorae* (Coastal Wattle), *Ozothamnus ferrugineus* (Tree Everlasting), *Leucopogon parviflorus* (Coast Beard-heath), and *Eucalyptus ovata* (Swamp Gum). The understory vegetation contains a large number of small shrubs and herbaceous species. The most significant weed impacting the site is *Acacia longifolia* ssp. *sophorae* (Coastal Wattle). Other weeds include, *Phalaris aquatica* (Phalaris), *Leontodon saxatilis* (Lesser Hawkbit) and *Trifolium* sp. (Clover).

Site B3 represents an example of a State (Provisional List of Threatened Ecosystems of SA) Endangered community.

No threatened species flora were observed during the site assessment. One NPW Act listed species was observed during the site assessment: Swamp Wallaby (*Wallabia bicolor*). A database search identified a further seven NPW Act listed species (

Table 17) within a five kilometre radius that could potentially utilise Site B3 for habitat.

Overall, Site B3 is in moderate to good condition.

Table 10 provides a summary of key attributes for Site B3. GPS reference point: 409968 5876529.

Table 10. Summary table of B3 attributes.

Area	4.258
Vegetation Condition Score	50.57
Threatened Ecological Community Score	1.30
Threatened Fauna Score	0.08
Unit Biodiversity Score	78.16
Gain Score	7.91
SEB Points	33.70

Site B4 *Gahnia trifida* Sedgeland with emergent *Leptospermum lanigerum, Acacia longifolia* ssp. *sophorae* and *Ozothamnus ferrugineus*

Site B4 is 4.950 hectares located on a flat plain of shallow loam over limestone. The dominant species are *Gahnia trifida* (Cutting Grass), *Leptospermum lanigerum* (Silky Tea-tree), *Acacia longifolia* ssp. *sophorae* (Coastal Wattle), *Ozothamnus ferrugineus* (Tree Everlasting), *Leptospermum continentale* (Prickly Tea-tree) and *Leucopogon parviflorus* (Coast Beard-heath). The understory vegetation contains a large number of herbaceous species. The most significant weeds impacting the site are *Phalaris aquatica* (Phalaris) and *Acacia longifolia* ssp. *sophorae* (Coastal Wattle). Other weeds include, *Leontodon saxatilis* (Lesser Hawkbit), *Cirsium vulgare* (Spear Thistle), and *Rosa rubiginosa* (Sweet Briar).

Site B4 represents an example of a State (Provisional List of Threatened Ecosystems of SA) Endangered community.

No threatened species flora were observed during the site assessment. One NPW Act listed species was observed during the site assessment: Swamp Wallaby (*Wallabia bicolor*). A database search identified a further seven NPW Act listed species (

Table 17) within a five kilometre radius that could potentially utilise Site B3 for habitat.

Overall, Site B4 is in good condition.

Table 11 provides a summary of key attributes for Site B4. GPS reference point: 409888 5876196.

Table 11. Summary table of B4 attributes.

Area	4.95
Vegetation Condition Score	60.70
Threatened Ecological Community Score	1.30
Threatened Fauna Score	0.08
Unit Biodiversity Score	93.83
Gain Score	6.27
SEB Points	31.04

Site B5 *Melaleuca lanceolata* Low Open Woodland over *Austrostipa* sp., *Rytidosperma* sp. and exotic grasses and herbs.

Site B5 is 2.662 hectares located on a flat plain of shallow loam over limestone. The dominant species are *Melaleuca lanceolata* (Dryland Tea-tree), *Austrostipa* sp. (Spear-grass) and *Rytidosperma* sp. (Wallaby-grass). The most significant weeds impacting the site are *Avena barbata* (Bearded Oat) and *Scabiosa atropurpurea* (Pincusion). Other weeds include, *Lagurus ovatus* (Hare's Tail Grass), *Trifolium* sp. (Clover) and *Cirsium vulgare* (Spear Thistle).

There is significant grazing pressure on Site B5 likely due to abundant kangaroos and rabbits. Natural regeneration has been prevented with many large shrub species reduced to groundcovers.

No threatened species flora or fauna were observed during the site assessment. However, a database search identified five NPW Act listed species (

Table 17) within a five kilometre radius that could potentially utilise Site B5 for habitat.

Overall, Site B5 is in poor to moderate condition.

Table 12 provides a summary of key attributes for Site B5. GPS reference point: 410333 5876153.

Table 12. Summary table of Site B5 attributes.

Area	2.662
Vegetation Condition Score	20.24
Threatened Ecological Community Score	1.00
Threatened Fauna Score	0.06
Unit Biodiversity Score	24.03
Gain Score	5.67
SEB Points	15.09

Site C1 *Eucalyptus ovata* Open Woodland over *Acacia leiophylla* over *Austrostipa* sp, *Rytidosperma* sp. and exotic grasses and herbs

Site C1 comprises 4.12 hectares of an SEB Credit site from SEB 2010_2027. It is located on a flat plain of shallow loam over limestone. The dominant species are *Eucalyptus ovata* (Swamp Gum), *Acacia leiophylla* (Coast Golden Wattle), *Acacia paradoxa* (Kangaroo Thorn), *Rytidosperma* sp. (Wallaby-grass) and *Austrostipa* sp. (Spear-grass). Several small depressions also contain a wide range of native herbs including, *Dichondra repens* (Kidney Weed), *Lobelia anceps* (Angled Lobelia), *Centella asiatica* (Asian Centella) and *Hydrocotyle muscosa* (Mossy Pennywort).

The most significant weeds impacting the site are *Scabiosa atropurpurea* (Pincushion) and *Avena barbata* (Bearded Oat). Other weeds include, *Festuca arundinacea* (Tall Meadow Fescue) and *Leontodon saxatilis* (Lesser Hawkbit) with minor occurrences of *Rosa rubiginosa* (Sweet Briar), *Verbascum virgatum* (Twiggy Mullein) and *Asphodelus fistulosus* (Onion Weed).

There is significant grazing pressure on Site C1 likely due to abundant kangaroos and rabbits. Despite this, there are several patches of *Eucalyptus ovata* (Swamp Gum) regeneration, plus a few examples of *Adriana quadripartita* (Coast Bitter-bush) and *Ozothamnus ferrugineus* (Tree Everlasting).

No threatened species flora or fauna were observed during the site assessment. However, a database search identified five NPW Act listed species (

Table 17) within a five kilometre radius that could potentially utilise Site C1 for habitat

Overall, Site C1 is in moderate condition.

Table 13 provides a summary of key attributes for Site C1. GPS reference point: 410524 5876583.

Table 13. Summary table of Site C1 attributes.

Area	4.12
Vegetation Condition Score	38.78
Threatened Ecological Community Score	1.00
Threatened Fauna Score	0.06
Unit Biodiversity Score	46.44
Gain Score	6.72
SEB Points	27.71

Site D1 *Eucalyptus obliqua* Open Woodland over *Pteridium esculentum, Phalaris aquatica* and *Bromus diandrus.*

Site D1 is 2.84 hectares located on the eastern side of a small ridge line. The soil is sandy loam. The dominant species are *Eucalyptus obliqua* (Messmate Stringybark) and *Pteridium esculentum* (Bracken Fern). The most significant weeds impacting the site are *Phalaris aquatica* (Phalaris) and *Bromus diandrus* (Great Brome).

No threatened species flora or fauna were observed during the site assessment. However, a database search identified two NPW Act listed species (

Table 17) within a five kilometre radius that could potentially utilise Site D1 for habitat.

Overall, Site D1 is in poor condition.

Table 14 provides a summary of key attributes for Site D1. GPS reference point: 411495 5878276.

Table 14. Summary table of Site D1 attributes.

Area	2.84
Vegetation Condition Score	14.61
Threatened Ecological Community Score	1.00
Threatened Fauna Score	0.04
Unit Biodiversity Score	16.25
Gain Score	4.59
SEB Points	13.04

Site E1 *Eucalyptus ovata* Open Forest over *Muehlenbeckia gunnii* and *Pteridium esculentum*

Site E1 is 1.428 hectares located on a flat plain of shallow loam over limestone. The dominant species are *Eucalyptus ovata* (Swamp Gum), *Muehlenbeckia gunnii* (Coastal Climbing Lignum) *Pteridium esculentum* (Bracken Fern) and

Acacia melanoxylon (Blackwood). A wide range of native grasses and herbs occur on the site with many herbaceous species concentrated around the three permanently filled water holes. The most significant weeds impacting the site are *Scabiosa atropurpurea* (Pincushion), *Festuca arundinacea* (Tall Meadow Fescue) and *Dactylis glomerata* (Cocksfoot). Other weeds include, *Cirsium vulgare* (Spear Thistle), *Carduus tenuiflorus* (Slender Thistle) and *Hirschfeldia incana* (Buchan Weed).

Site E1 represents an example of a State (Provisional List of Threatened Ecosystems of SA) Vulnerable community.

One NPW Act listed plant species was observed on site; *Mentha diemenica* (Slender Mint) (Rare). No threatened fauna species were observed during the site assessment. However, a database search identified seven NPW Act listed species (

Table 17) within a five kilometre radius that could potentially utilise Site E1 for habitat.

Overall, Site E1 is in moderate condition.

Table 15 provides a summary of key attributes for Site E1. GPS reference point: 410930 5877235.

Table 15. Summary table of Site E1 attributes.

Area	1.423
Vegetation Condition Score	45.64
Threatened Ecological Community Score	1.20
Threatened Fauna Score	0.08
Unit Biodiversity Score	66.27
Gain Score	7.88
SEB Points	11.25

Site F1 *Gahnia trifida* and *Baumea juncea* Sedgeland over *Festuca arundinacea, Holcus lanatus* and *Scabiosa atropurpurea*.

Site F1 is 5.381 hectares located on a flat plain of shallow loam over limestone. The dominant species are *Gahnia trifida* (Cutting Grass) and *Baumea juncea* (Bare Twig-rush) with minor occurrences of several native grasses. Several small depressions also contain a wide range of native herbs including, *Dichondra repens* (Kidney Weed), *Lobelia anceps* (Angled Lobelia), *Centella asiatica* (Asian Centella) and *Hydrocotyle muscosa* (Mossy Pennywort).

The most significant weeds impacting the site are *Festuca arundinacea* (Tall Meadow Fescue), *Holcus lanatus* (Yorkshire Fog) and *Scabiosa atropurpurea* (Pincushion). Other weeds include *Rosa rubiginosa* (Sweet Briar), *Verbascum virgatum* (Twiggy Mullein), *Carduus tenuiflorus* (Slender Thistle) and *Hirschfeldia incana* (Buchan Weed) .

Site F1 represents an example of a State (Provisional List of Threatened Ecosystems of SA) Endangered community.

Two NPW Act listed plant species were observed on site; *Mentha diemenica* (Slender Mint) (Rare) and *Pentapogon quadrifidus* var. *quadrifidus* (Five-awn Spear-grass) (Rare). No threatened fauna species were observed during the site assessment. However, a database search identified seven NPW Act listed species (

Table 17) within a five kilometre radius that could potentially utilise Site F1 for habitat.

Overall, Site F1 is in moderate condition.

Table 16 provides a summary of key attributes for Site F1. GPS reference point: 410568 5876704.

Table 16. Summary table of Site F1 attributes.

Area	5.381
Vegetation Condition Score	46.19
Threatened Ecological Community Score	1.30
Threatened Fauna Score	0.08
Unit Biodiversity Score	74.85

Gain Score	8.75
SEB Points	47.06

Table 17. Threatened fauna that could potentially use the SEB Area for habitat.*

Common Name	Species	EPBC	NPW	A1	A2	A3	B1	B2	B3	B4	B5	C1	D1	E1	F1
Beautiful Firetail	*Stagonopleura bella*						X	X	X	X	X	X	X	X	X
Blue-winged Parrot	*Neophema chrysostoma*		V	X	X	X		X			X	X	X	X	X
Latham's Snipe	*Gallinago hardwickii*		R	X	X	X									
Marbled Toadlet	*Pseudophryne semimarmorata*						X	X	X	X	X	X		X	X
Rufous Bristlebird	*Dasyornis broadbenti broadbenti*						X	X	X	X	X	X		X	X
Southern Emu-wren	*Stipiturus malachurus polionotum*		R	X	X	X	X	X	X	X					
Swamp Rat	*Rattus lutreolus*						X		X	X				X	X
Swamp skink	*Lissolepis coventryi*						X		X	X				X	X
Swamp Wallaby	*Wallabia bicolor*						X #		X #	X #					
White-lipped Snake	*Drysdalia coronoides*		R	X	X	X	X	X	X	X	X	X		X	X

*Based on desktop survey of NatureMaps, Atlas of Living Australia and EPBC Protected Matters search using a five-kilometre radius from SEB Areas.

Observed during site assessment.

Photographs of the proposed SEB Area and associated GPS points.

Photographs of the proposed SEB Areas are provided in a separate document *Hurst SEB Images.pdf*.

Table 18 provides a summary SEB Areas and their associated GPS reference points.

Table 18. Summary table of SEB Area locations.

Site	Area (ha)	GPS Coordinates	
		Northing	Easting
A1	21.286	411790	5881453
A2	1.646	412912	5882523
A3	8.453	412355	5882149
B1	4.959	410106	5876504
B2	8.449	410209	5876373
B3	4.258	409968	5876529
B4	4.95	409888	5876196
B5	2.662	410333	5876153
C1	4.12	410524	5876583
D1	2.84	411495	5878276
E1	1.428	410930	5877235
F1	5.381	410568	5876704

SEB Management Plan

A Native Vegetation Management Plan is required as part of the Conditions of Consent for clearance.
The Management Plan is preferred at the time of submitting the clearance application however it can be lodged within the 6-12 week assessment process if required. The Management Plan template is found under Tools for Accredited Consultants. The Management Plan can be attached in the appendices.

The SEB Management Plan for the 70.432 hectares of native vegetation listed above will be provided if clearance approval is successful for the 216 trees listed in this application.

6. Appendices

Appendix 1. Scattered Tree Assessment Scoresheets associated with the proposed clearance are provided in a separate Excel file.

Appendix 2. Bushland Assessment Scoresheets associated with the proposed SEB are provided in separate Excel files.

Appendix 4. Document with Tree Images, *Hurst Tree Images Part 1, Trees 1 to 60.pdf*.

Appendix 5. Document with Tree Images, *Hurst Tree Images Part 2, Trees 61 to 155.pdf*.

Appendix 6. Document with Tree Images, *Hurst Tree Images Part 3, Trees 156 to 216.pdf*.

Appendix 7. Document with SEB images, *Hurst SEB Images.pdf*.

Appendix 8. Water Licence No. 13701