68929_M01_BlueScope_NeoSmelt Ecology Inspection Rev 1

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Project NeoSmelt – Ecology Site Inspection

1. Background

BlueScope Future Technologies Pty Ltd (BlueScope), an Australian-based company, is a leading provider of steel products and technologies, servicing markets across Australia, New Zealand, and the United States. BlueScope currently operates the Port Kembla Steelworks using traditional blast furnace technology.

In partnership with BHP, Rio Tinto, Mitsui Iron Ore Development and Woodside, BlueScope is working to transition toward a more sustainable steelmaking process by developing Direct Reduced Iron technology coupled with Electric Smelting Furnace capability, referred to as the DRI-ESF process. This initiative aims to enable the use of Pilbara iron ores while significantly reducing greenhouse gas emissions.

As part of this initiative, the partners are progressing the NeoSmelt Project (the Project), designed to provide critical insights into low-emissions steel production. During the Pre-Feasibility Study phase, BlueScope engaged Worley to assess a range of potential sites for the NeoSmelt Pilot facility. The assessment identified a site in the Rockingham Industrial Zone (RIZ), Western Australia, as the most suitable greenfield location.

The proposed location for the Project is on part of Lot 9008 on Plan 421725, Patterson Road (approximately 19.9 hectares [ha] in size) in the RIZ and includes potential utility connection corridors (Figure 1). The site is zoned for industrial use, consistent with the area's long-standing industrial development, and is well-positioned with access to key services, including electricity from a nearby 132 kV overhead power line, as well as natural gas, hydrogen and other industrial gases supplied by local providers. Additionally, port infrastructure is available in Kwinana, operated by the Fremantle Port Authority.

JBS&G Australia Pty Ltd (JBS&G) has been engaged to by BlueScope to deliver the Environmental Work Package for the Project. As part of the initial due-diligence review stage of the Project, an information gap was identified in relation to the potential presence of a nationally threatened ecological community (TEC) in the southeastern corner of the Project site – Tuart Woodlands and Forests of the Swan Coastal Plain – which is listed as critically endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The Tuart trees and associated vegetation present in the area may represent the TEC and provide habitat for a range of animal species, including some that are also nationally threatened, such as Black Cockatoos and the Western Ringtail Possum.

Whilst the current Project layout proposes to exclude the trees from the disturbance footprint, JBS&G recommended that a site inspection was needed to determine the value and extent of the vegetation and confirm mitigation measures to avoid direct disturbance and mitigate any potential indirect impacts.

This memo presents the findings of the ecological site inspection.

2. Scope of Works

BlueScope engaged JBS&G to conduct a site inspection to determine the presence and extent of the Tuart *(Eucalyptus gomphocephala)* woodlands and forests of the Swan Coastal Plain TEC within the Project site. In addition to determining the condition and extent of the TEC, the site inspection was used to identify other ecological values or potential threatening processes that may aid future Project planning.

The Assessment Area covered an area of approximately 22 hectares (ha) limited to the part of the Project site on Lot 9008 between Charles Street (north), Patterson Road (east) and Ward Road (south) (Figure 2).

3. Methods

3.1 Timing and Personnel

The inspection was conducted on 11 July 2025 by two ecologists from JBS&G:

- Brett Neasham – Associate (Ecology); and
- Asha Foulds – Project Scientist (Ecology).

3.2 Field Inspection Methods

Tuart trees within the Assessment Area were measured to determine if they had a Diameter at Brest Height (DBH) greater than 150 mm. These trees are considered established trees that form part of the TEC (TSSC, 2019). For Tuart trees with a DBH greater than 150 mm, the following details were recorded:

- Waypoint on a handheld Garmin Global Positioning System (GPS) unit recorded in GDA2020 (Geocentric Datum of Australia 2020), MGA2020 (Map Grid of Australia 2020);
- DBH;
- Tree health condition; and
- Notes regarding vegetation, site conditions, invasive weeds and other information that can help to detail the ecological values of the Project site.

During the inspection, the Assessment Area was subject to a visual assessment to identify Tuart trees, other potential ecological values and threats. Locations of environmental weeds, particularly Weeds of National Significance (WoNS) or declared pest (plants) listed under s22 of the *Biosecurity and Agriculture Management Act 2007* (BAM Act), were noted. Where weeds were observed, a photograph of the location and extent of the population was recorded on a mobile phone using the 'Solocator' app.

The condition of the TEC was determined using the Tuart patch condition categories in Table 3.1 derived from the Approved Conservation Advice for the TEC (TSSC, 2019).

Table 3.1 Tuart patch condition categories

Rating	Biotic threshold
Very high condition	≥80 % of all understorey[1] vegetation cover is native; OR At least 12 native understorey species per 0.01 ha (10 m x 10 m plot or equivalent sample unit).
High condition	≥60 % of all understorey vegetation cover is native[1] OR At least 8 native understorey species per 0.01 ha (10 m x 10 m plot or equivalent sample unit).
Moderate condition	≥50 % of all understorey vegetation cover is native; OR At least 4 native understorey species per 0.01 ha (10 m x 10 m plot or equivalent sample unit).

Rating	Biotic threshold
Poor	Has minimal or no native cover and species richness. That is: <50 % of all understorey vegetation cover is native; AND Less than 4 native understorey species per 0.01 ha (10 m x 10 m plot or equivalent sample unit).

[1] Understorey vegetation cover includes annual and perennial vascular plant species of both the ground layer and the shrub layer up to 3 m in height.

3.3 Data Analysis

To determine whether the Tuart trees in the Assessment Area form a patch (i.e., a discrete, mostly continuous area) as defined in the Approved Conservation Advice for the TEC (TSSC, 2019), waypoints were imported into a Geographical Information System (GIS) where each tree had a 30 m buffer applied to the canopy, with an additional 30 m buffer applied to determine the extent and individuality/continuity of the patch (Figure 2).

3.4 Limitations

The Approved Conservation Advice for the TEC (TSSC, 2019) suggests to survey over more than one season; however, the objective of the inspection was to identify and measure the Tuart trees, infer the condition of the TEC, and map the TEC boundary and, therefore, one survey was sufficient.

There were also some limitations with data collection, data outputs and survey design. The data for 42 trees had to be inferred as being greater than 150 mm DBH as they were unable to be measured due to thick vegetation at the base of trees or they occurred in areas with the presence of drug paraphernalia, human waste and people. Note that data from the inferred trees was excluded from the statistics in Section 4.

4. Results

A total of 98 Tuart trees with a DBH greater than 150 mm were observed at the Assessment Area (example at Plate 11), of which 56 had a measured DBH and the balance had an inferred DBH (Figure 2). The average measured DBH was 470 mm (calculated using measured not inferred trees).

Fifteen percent of trees were assessed as healthy (90% foliage present), 79% were assessed as in slightly stressed condition (75-90% foliage present), 3% were assessed stressed (50-75% foliage present), 2% were very stressed (<50% foliage presence) and one tree was dead. The condition of the individual trees is shown on Figure 3, with the most stressed and dead trees located in the cluster along the Charles Street boundary.

4.1 Tuart TEC

The Tuart trees within the Inspection Area met the following key diagnostic criteria for the TEC as outlined in the Approved Conservation Advice (TSSC, 2019):

- Within the Swan Coastal Plain Bioregion; and
- On the Quindalup Dunes system.

The Tuart TEC covered 4.94 ha (including the 30 m canopy buffer and the additional 30 m patch buffer). The patch was determined to be in Moderate condition as per the Approved Conservation Advice (TSSC, 2019). As the patch is greater than 2 ha and less than 5 ha in size and is in Moderate condition, it is considered part of the protected ecological community in accordance with the condition categories and thresholds in the Approved Conservation Advice (TSSC, 2019) (refer to Attachment A).

4.2 Environmental Values

Additional ecological values identified during the site inspection included Peppermint trees (*Agonis flexuosa)* (refer to Plate 1 and Plate 2) and Grass trees (*Xanthorrhoea* sp.) (refer to Plate 3 and Plate 4).

Peppermint trees can provide habitat and food for Western Ring Tail Possum (*Pseudocheirus occidentalis)*, which are listed under the EPBC Act and, therefore, their habitat is critical and important to protect (DPaW, 2017).

Grass trees are desired due to their iconic look and hardy nature (Bush Heritage Australia, 2025) and they carry cultural significance for Traditional Owners. Many of the Grass trees in the Assessment Area represent good examples of the species and could be removed for sale or relocation or retained on-site for use in landscaping (e.g., by a local specialist nursey operated by a Traditional Owner group).

Establishment of a Conservation Zone around the TEC patch will preserve the environmental values of the Tuart trees and the associated habitat, including the Peppermint trees and Grass trees in the zone.

4.3 Environmental Threats

The primary threat to the Tuart TEC found in the Assessment Area is invasive flora. Weed species compete with native species for sunlight, water and nutrients (Weeds Australia, 2024b), and can establish quickly allowing them to dominate over native species. Four significant weeds were identified in the Inspection Area:

- Bridal Creeper *(Asparagus asparagoides)*: a scrambling herb/vine that forms dense thickets that smother other plants (refer to Plates 5 and 6) (Weeds Australia, 2024a). Due to its highly invasive nature, it is listed under s22(2) of the *Biosecurity and Agriculture Management Act 2007* (BAM Act) as a Declared Pest;
- Narrow Leaf Cotton Bush *(Gomphocarpus fruticosus):* a slender, perennial shrub, listed under s22(2) of the BAM Act as a Declared Pest (refer to Plates 7 and 8) (Weeds Australia, 2024b);
- Century Plant *(Agave americana):* a large, long-lived succulent that spreads to form impenetrable colonies (refer to Plate 9) (DWER, 2025). Due to its invasive nature, it is listed under s11 of the BAM Act as a Permitted Organism (DPIRD, 2022); and
- Brazilian Pepper Tree *(Schinus terebinthifolia):* an evergreen tree that forms dense thickets listed under s11 of the BAM Act as a Permitted Organism (refer to Plate 10) (Urban Bushland Council WA Inc, 2025).

5. Discussion

The Assessment Area was inspected for the presence, distribution and condition of Tuart TEC, alongside other ecological values. The Tuart TEC was determined to be present in the Assessment Area, where it forms a narrow strip (relative to the rest of Project site) running north to south adjacent to Patterson Road.

The condition of the TEC patch is Moderate and likely to decline due to threatening processes, including anthropogenic impacts and environmental threats. Anthropogenic impacts include dumping of waste, track proliferation and public access. The main environmental threats include isolation/fragmentation of the community and presence of invasive flora. Active management is recommended to improve the condition of the TEC and associated habitat.

6. Recommendations

The following recommendations are made:

- The mapped extent of the TEC patch is considered in the Plot Plan layout; i.e. a Conservation Zone is established around the patch, including the associated habitat in the Peppermint trees. Ideally, the Conservation Zone would be defined by the Tuart TEC patch buffer (refer to Figure 2). However, if this is not possible, then low impact activities could be considered in the patch buffer such as laydown and vehicle parking;
- Where utility connections are required to pass close to or through the vegetation across the lot boundary, this should either avoid the TEC patch or use gaps in the patch where present. Use of above-ground infrastructure in these areas would also minimise potential impacts to the trees;
- Specialist nurseries or organisations are provided access to the site to remove high-value Grass trees to be retained for future use at the site or for donation or sale to third parties;
- A basic fauna assessment and targeted survey for black cockatoo habitat is carried out in the TEC patch; and
- Weed management measures are implemented to limit potential decline of the TEC (refer to Table 6.1).

Table 6.1: Management of weeds

Weed	Management
Bridal Creeper *(Asparagus asparagoides)*	• Hand spray plants with 0.2 g mesulfuron methyl + Pulse® in 15 L water (or 2.5-5g/ha + Pulse®); • Optimum time to spray is July to September (Florabase, 2025a); • Avoid herbicide coming in contact with native plants or soil; • Hand pull and dispose of rhizomes (main growth point) (Weeds Australia, 2024a).
Narrow Leaf Cotton Bush *(Gomphocarpus fruticosus)*	• Hand spray foliage of plants with 1.5% glyphosate or cut and paint with 50% glyphosate; • Optimum time to spray is September to December (Florabase, 2025b); • Avoid herbicide coming in contact with native plants or soil; • Hand pull or slash at base and dispose of material to prevent regrowth from seeds; • Avoid contact with toxic sap (Weeds Australia, 2024b).
Century Plant *(Agave americana)*	• Stem inject base of leaves 1 part Tordon® : 5 parts diesel (Florabase, 2025c); • Cut plant at base and dispose, as when in contact with soil cut plants can take root again (DWER, 2025); • Herbicide treatment November to January or manual removal year-round.
Brazilian Pepper Tree *(Schinus terebinthifolia)*	• Hand pull seedlings; • Inject the stem of older plants with 50% glyphosate; • Optimum treatment should be during growing season, December to March (Urban Bushland Council WA, 2025).

7. References

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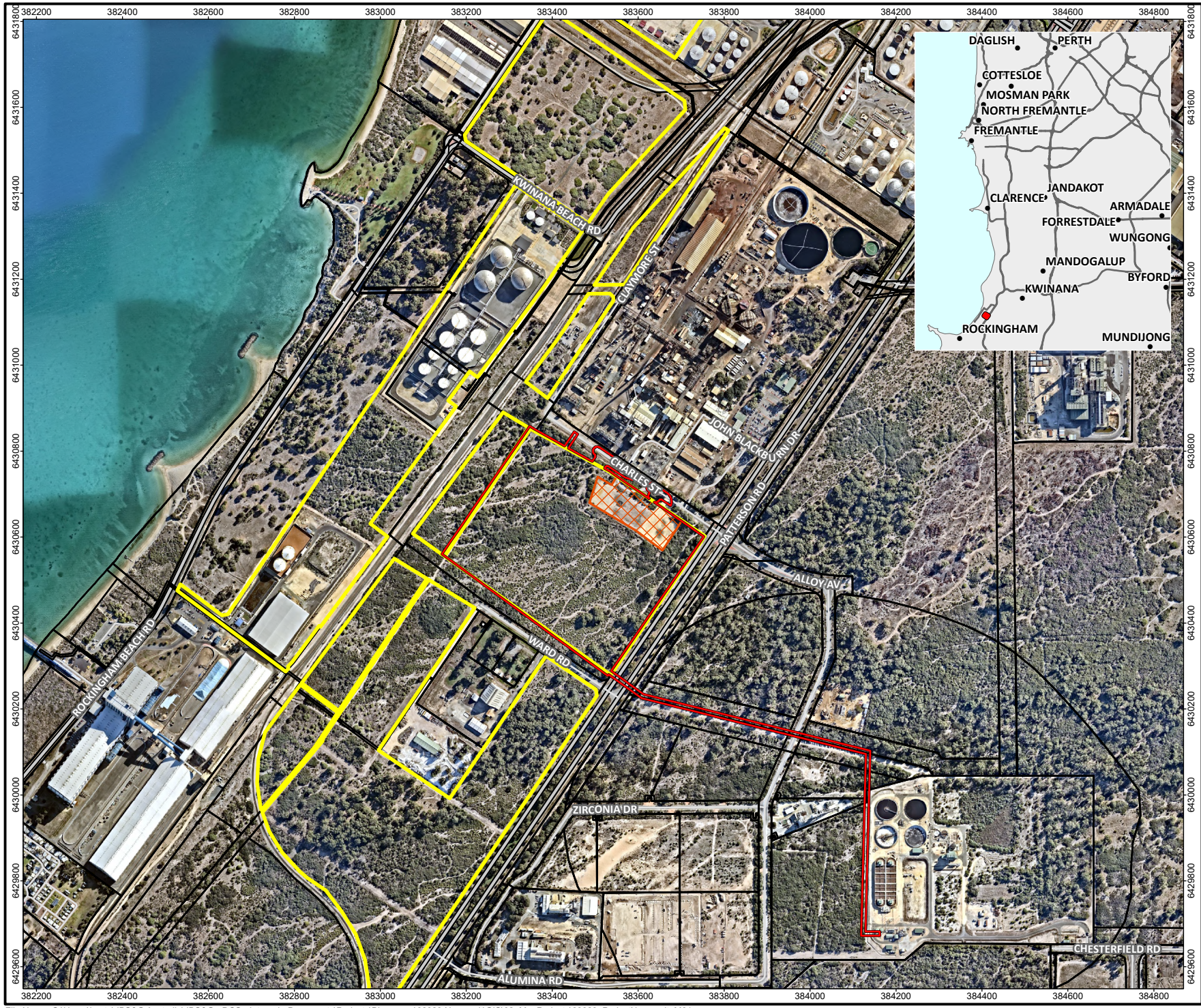
Urban Bushland Council WA Inc. (2025). *Brazilian Pepper Tree*. Retrieved from https://www.bushlandperth.org.au/weeds/brazilian-pepper-tree/

Weeds Australia. (2024a). *Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus*. Retrieved from https://weeds.org.au/profiles/bridal-creeper-veil/

Weeds Australia. (2024b). *Narrow Leaf Cotton Bush, Narrow-Leaved Cotton Bush, Narrowleaf Cottonbush, Swan Plant, Swanplant, Milk Weed, Milkweed, Cape Cotton, Duck Bush, Swan Bush, Wild Cotton*. Retrieved from https://weeds.org.au/profiles/narrow-leaf-cotton/

Figures



Legend

- Indicative project boundary (19.93ha)
- Lot 9008, Plan 421725
- Disturbed area
- Cadastral boundary (LGATE-002)

Roads (LGATE-195)

- Highway
- Minor road

JBS&G

Job No: 68929

Client:
BlueScope Future Technologies Pty Ltd

Version: A	Date: 15/08/2025
Drawn By: jcrute	Checked By: JB

Scale 1:12,000 at A4

0 100 200
metres

Coord. Sys. GDA2020 MGA Zone 50

Patterson Road
East Rockingham

PROJECT NEOSMELT - INDICATIVE PROJECT BOUNDARY

FIGURE 1

File Name: C:\Users\jcrute\JBS&G Australia\JBS&G - DCS - Internal - Documents\Projects\Bluescope\68929 Neosmelt\GIS\02_MapProjects\68929_ProjectNeosmelt_M01.aprx
Image Reference: www.nearmap.com Imagery Date: 19 April 2025

Legend

- Ecology Assessment Area
- Cadastral boundary (LGATE-002)
- TEC buffer
- Tuart TEC patch buffer
- Traverses

Roads (LGATE-195)

- Highway
- Minor road

- Tree record (*Eucalyptus gomphocephalaita*
- Measured
- Inferred

JBS&G

Job No: 68929

Client:
BlueScope Future Technologies Pty Ltd

Version: M01	Date: 20/08/2025
Drawn By: droberts	Checked By: JB

Scale 1:3,698 at A4

0 50 100
metres

Coord. Sys. GDA2020 MGA Zone 50

**Patterson Road,
East Rockingham**

PROJECT NEOSMELT – ECOLOGY SITE INSPECTION

FIGURE 2

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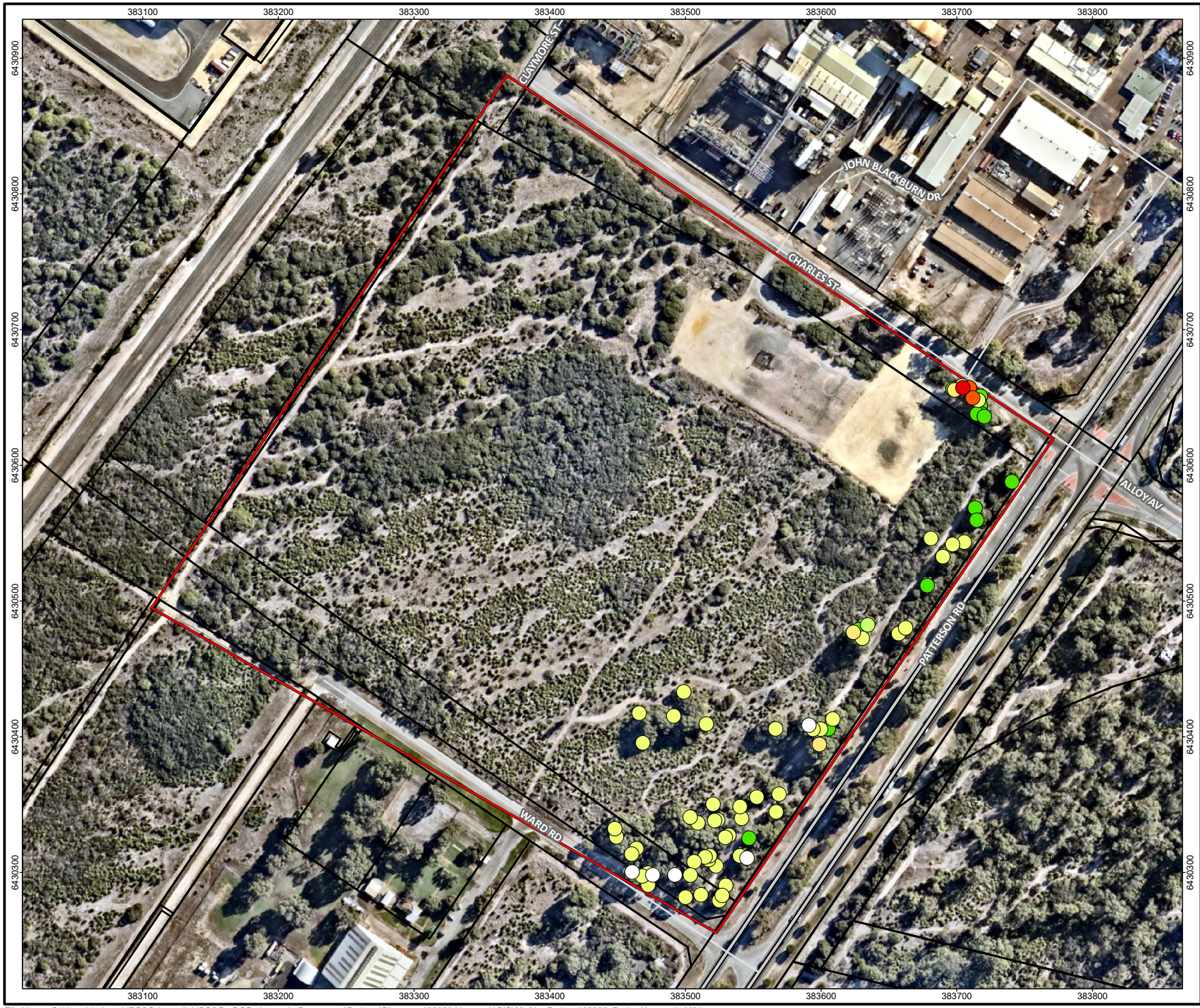
Image Reference: www.nearmap.com Imagery Date: 19 April 2025



Legend

- Ecology Assessment Area
- Cadastral boundary (LGATE-002)

Roads (LGATE-195)

- Highway
- Minor road
- healthy (90% foliage present)
- healthy (90% foliage present),slightly stressed (75-90% foliage present)
- slightly stressed (75-90% foliage present)
- stressed (50-75% foliage present)
- very stressed (< 50% foliage present)
- dead medium (foliage absent, bark and fine twigs still present)
- Unknown

JBS&G

Job No: 68929

Client:
BlueScope Future Technologies Pty Ltd

Version: M01	Date: 20/08/2025
Drawn By: droberts	Checked By: JB

Scale 1:3,800 at A4

0 50 100
metres

Coord. Sys. GDA2020 MGA Zone 50

Patterson Road,
East Rockingham

TUART TREE CONDITION

FIGURE 3

File Name: C:\Users\droberts\JBS&G Australia\JBS&G - DCS - Internal - Documents\Projects\Bluescope\68929 Neosmelt\GIS\02_MapProjects\68929_ProjectNeosmelt_M01.aprx
Image Reference: www.nearmap.com Imagery Date: 19 April 2025

Plates

Plate 1 Peppermint Trees *(Agonis flexuosa)*

Plate 2 Peppermint Trees *(Agonis flexuosa)*

Plate 3 Grass Trees *(Xanthorrhoea* sp.*)*

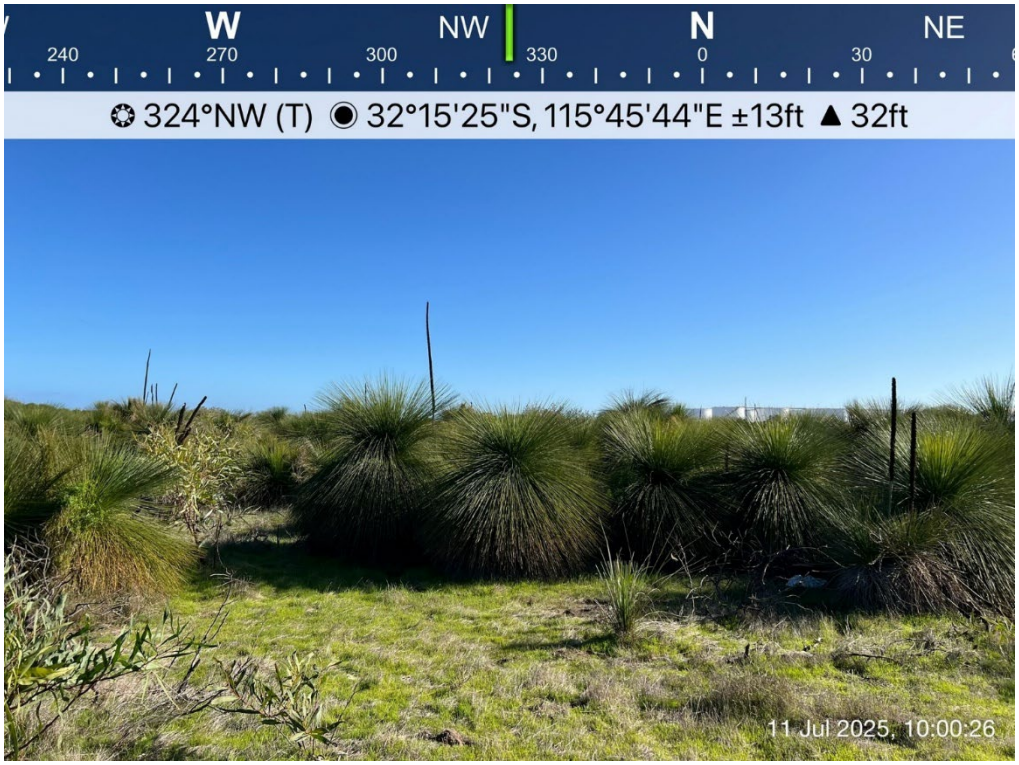


Plate 4 Grass Trees *(Xanthorrhoea* sp.*)*

Plate 5 Bridal Creeper *(Asparagus asparagoides)*

Plate 6 Bridal Creeper *(Asparagus asparagoides)*

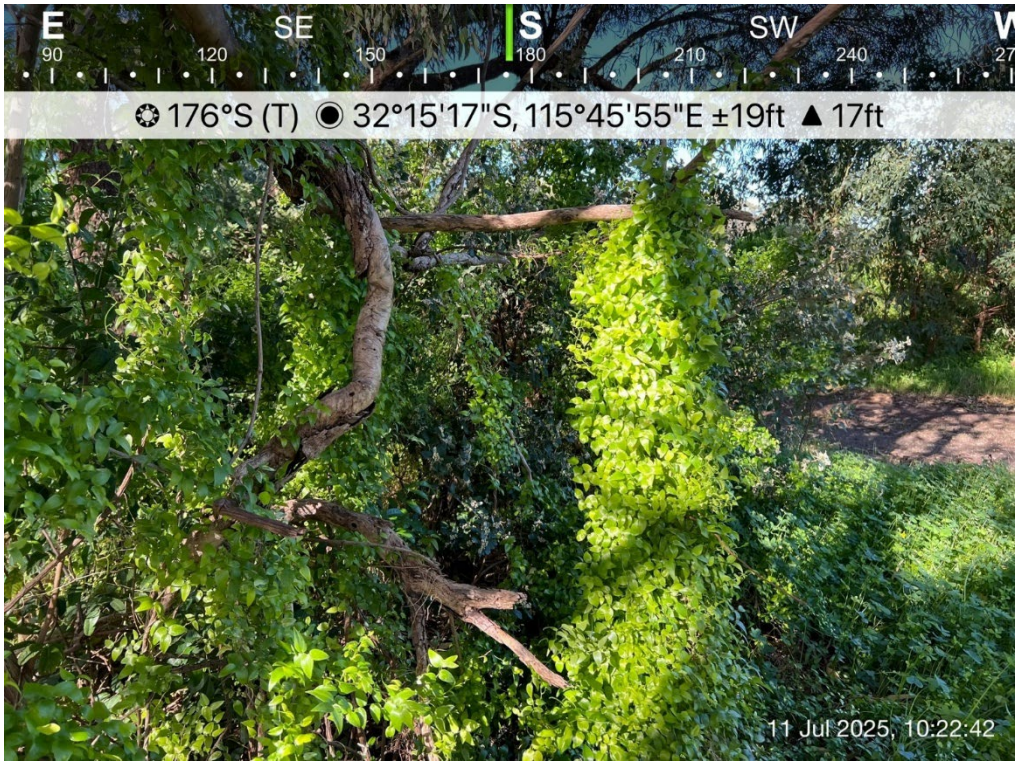


Plate 7 Narrow Leaf Cotton Bush *(Gomphocarpus fruticosus)*

Plate 8 Narrow Leaf Cotton Bush *(Gomphocarpus fruticosus)*

Plate 9 Century Plant *(Agave americana)*

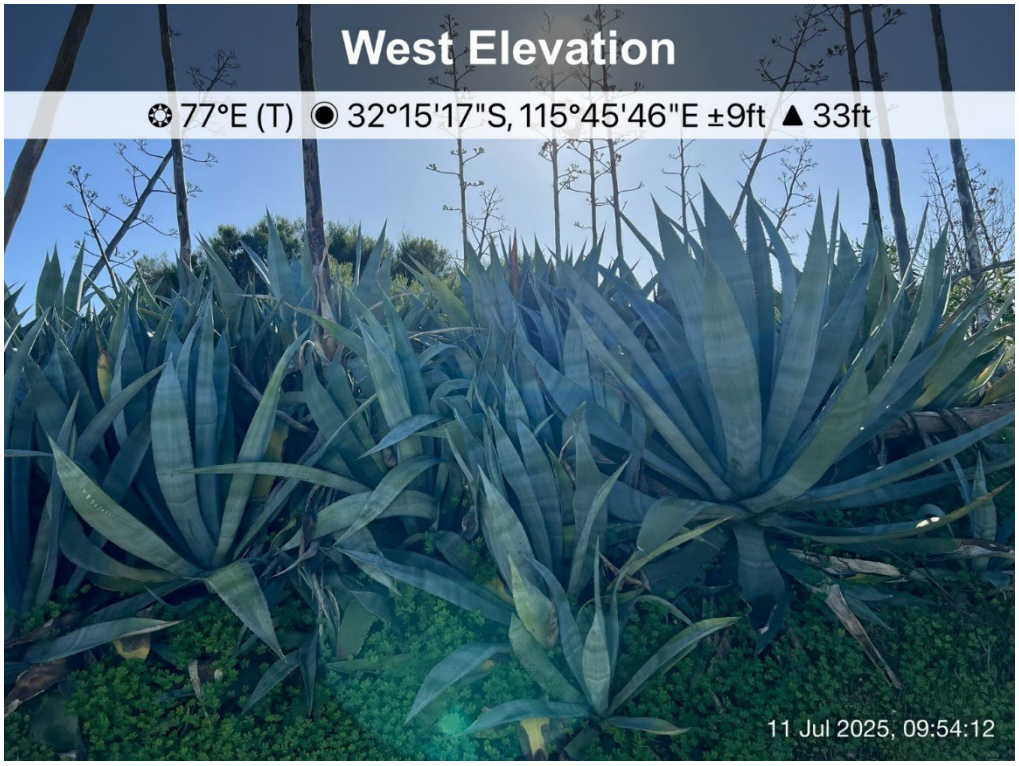


Plate 10 Brazilian Pepper tree *(Schinus terebinthifolia)*

Plate 11 Tuart trees (*Eucalyptus gomphocephala*)

Attachment A Tuart condition categories and thresholds

Table 2. Condition categories and thresholds

All patches ≥5 ha are part of the nationally protected ecological community, regardless of their understorey condition. That is, thresholds in this table do not apply to patches ≥5 ha, but the key diagnostic characteristics and patch definition must be met.

Patch size → Biotic thresholds ↓	≥2 ha <5 ha	≥0.5 ha <2 ha
Very high condition ≥80 % of all understorey^ vegetation cover is native# Or At least 12 native understorey^ species per 0.01 ha (10 m x 10 m plot or equivalent sample unit)	Medium sized patches with very high condition understorey. PART OF THE PROTECTED ECOLOGICAL COMMUNITY	Smaller patches with very high condition understorey. PART OF THE PROTECTED ECOLOGICAL COMMUNITY
High condition ≥80 % of all understorey^ vegetation cover is native# Or At least 8 native understorey^ species per 0.01 ha (10 m x 10 m plot or equivalent sample unit)	Medium sized patches with high condition understorey. PART OF THE PROTECTED ECOLOGICAL COMMUNITY	Smaller patches with high condition understorey. **AND** That either: have an important landscape role (≤100 m to native vegetation)* OR have a habitat role (≥2 very large trees per 0.5 ha)* OR show regeneration (≥15 seedlings and/or saplings per 0.5 ha)* PART OF THE PROTECTED ECOLOGICAL COMMUNITY
Moderate condition ≥50 % of all understorey^ vegetation cover is native# Or At least 4 native understorey^ species per 0.01 ha (10 m x 10 m plot or equivalent sample unit)	Medium sized patches with moderate condition understorey. **AND** That either: have an important landscape role (≤100 m to native vegetation)* OR have a habitat role (≥2 very large trees per 0.5 ha)* OR show regeneration (≥15 seedlings and/or saplings per 0.5 ha)* PART OF THE PROTECTED ECOLOGICAL COMMUNITY	NOT PART OF THE PROTECTED ECOLOGICAL COMMUNITY (but may be a focus for local protection or restoration)
Poor Has minimal or no native cover and species richness. That is: <50 % of all understorey^ vegetation cover is native# And Less than 4 native understorey^ species per 0.01 ha (10 m x 10 m plot or equivalent sample unit)	NOT PART OF THE PROTECTED ECOLOGICAL COMMUNITY (but may be a focus for local protection or restoration)	NOT PART OF THE PROTECTED ECOLOGICAL COMMUNITY (but may be a focus for local protection or restoration)

^ * – Table notes follow on the next page.

#'Native' refers to species naturally occurring in southwest Western Australia.

^ Understorey vegetation cover includes annual and perennial vascular plant species of both the ground layer and the shrub layer up to 3 m in height.

* Indicators of important landscape, habitat or regeneration features:

Landscape – the patch occurs in close proximity (≤100 m) to another patch of native vegetation of at least 1 ha in size. Other patches of native vegetation can be other patches of the ecological community and/or other vegetation where ≥50 % of the vegetation cover across all layers is comprised of plant species naturally occurring in southwest Western Australia.

OR

Habitat – the patch contains a mean of ≥2 very large trees (≥50 cm DBH) per half hectare of any species native to southwest Western Australia.

OR

Regeneration – the patch displays evidence of natural regeneration of eucalypts (*Corymbia* or *Eucalyptus*) naturally occurring in southwest Western Australia, represented by seedlings, saplings or other sub-mature stages (<15 cm DBH) with at least a mean of 15 individuals per half hectare.