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12 March 2024

Farnaz Mousavi

Department of Planning, Lands and Heritage
140 William Street
Perth WA 6000

Dear Farnaz,

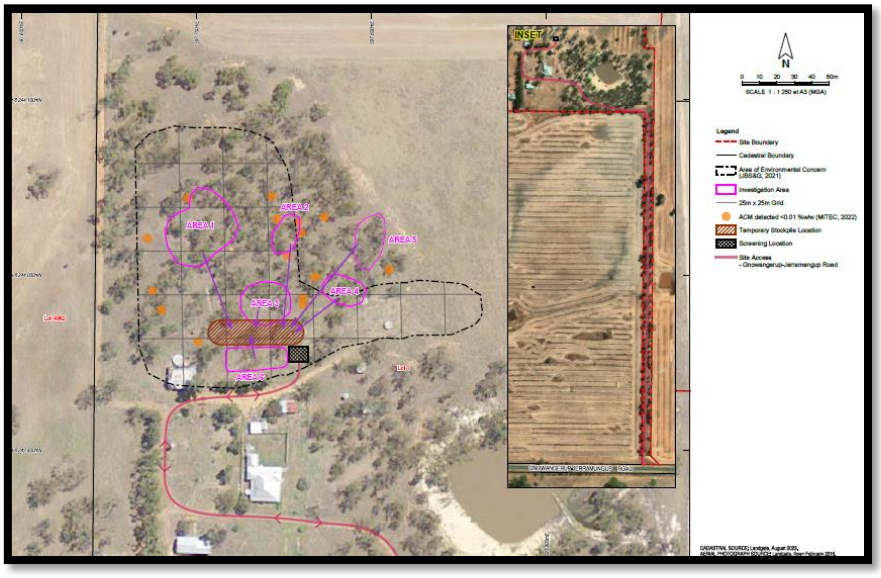
**RE: Former Gnowangerup Agricultural College – Vegetation Assessment and Advice**

Following is our assessment on the vegetation in the area requiring remediation for asbestos containing material on the Former Gnowangerup Agricultural College.

## 1 Background

The Department of Planning, Lands and Heritage (DPLH) is managing the remediation of asbestos containing material (ACM) at the Former Gnowangerup Agricultural College on 493 Gnowangerup-Jerramungup Road, Jackitup, on behalf of the Department of Education. The area of remediation is approximately 3,500m$^2$ and is shown by the black dashed line in Plate 1.

**Plate 1: Area requiring ACM remediation**



The area requiring remediation contains some trees and potentially some native understorey. PGV Environmental understands that site remediation may require clearing of understorey but that trees greater than 2m in height and with a trunk diameter of at least 50mm can be retained.

The amount of vegetation within the remediation area is around 1.6ha.

The remediation area is mapped within a WA Priority 3 Ecological Community (PEC) as shown in Plate 2 (as provided to PGV Environmental by DPLH). The specific PEC is the 'Eucalypt Woodlands of the Western Australian Wheatbelt'.

**Plate 2: Priority 3 Ecological Community mapped on the site**

## 2 Methodology

PGV Environmental undertook the following scope of work for the assessment:

- Assess the vegetation on site to determine whether it meets the description of the Priority 3 Ecological Community 'Eucalypt Woodlands of the Western Australian Wheatbelt'; and
- Provide advice whether a clearing permit will be required to clear the vegetation.

The assessment of the Eucalypt Woodlands of the Western Australian Wheatbelt ecological community included a site inspection by Dr Paul van der Moezel of PGV Environmental on 1 February 2024. The site inspection assessed the following:

- The vegetation condition of the area
- Presence and percentage cover of mature trees
- Identification of the species of mature trees
- Percentage cover of native understorey species
- Percentage cover of exotic plant species
- Size of the patch of trees

## 3 Eucalypt Woodland Ecological Community

The Eucalypt Woodlands of the Western Australian Wheatbelt ecological community (shortened to Eucalypt Woodland PEC in this report) is listed as a Priority 3 ecological community at State level and is listed as Critically Endangered under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

The Eucalypt Woodland PEC occurs in the wheatbelt regions of Western Australia from Mullewa in the north down to south of Cranbrook in the south. The community generally lies between the Darling Range to the west and the Great Western Woodlands to the east. Gnowangerup is within the mapped distribution of the Eucalypt Woodland PEC.

The main trees in a Eucalypt Woodland PEC are single stemmed eucalypts. The native understorey is diverse and very variable ranging from shrubs to herbs, grasses or bare. The Eucalypt Woodland PEC occurs on the flatter landscapes and lower rises rath than on hilltops.

The Conservation Advice for the Eucalypt Woodland PEC contains the following key diagnostic criteria:

- The distribution of the ecological community is limited to specific IBRA bioregions:
  - Avon Wheatbelt subregions - AVW01Merredin and AVW02 Katanning
  - Mallee – MAL02 Western Mallee only
  - Jarrah Forest – outlying patches off the Darling Range
- The structure of the community is a woodland.

The Conservation Advice for the Eucalypt Woodland PEC contains several examples of vegetation types which do not meet the criteria to be the Eucalypt Woodland PEC including:

- Isolated paddock trees;
- Small or narrow farm stands over crops, pasture and other exotic plants (weeds);
- Narrow roadside woodland remnants with little or no native understorey cover;
- Vegetation where the mallee eucalypt growth form is dominant;
- Dominant species is not Eucalyptus;
- Woodlands where the key eucalypt species also occurs in bioregions outside the wheatbelt.

A ‘patch’ of Eucalypt Woodland is defined as a discrete and mostly continuous area of the ecological community. It may include small-scale variations and disturbances such as tracks or breaks, watercourses/drainage lines or localised changes in vegetation that do not act as a permanent barrier or alter the overall functionality of the community.

A patch must meet the condition thresholds in Table 3 of the Conservation Advice (Plate 3).

**Plate 3: Minimum Condition Thresholds for the Eucalypt Woodland PEC**

**Table 3.** Minimum condition for patches of the WA Wheatbelt Woodlands ecological community. For each category, both the weed cover and mature tree presence criteria must apply plus one of either patch size or patch width, depending on whether the patch is a roadside remnant or not.

| Cover of exotic plants (weeds) AND | Mature trees [1] AND | Minimum patch size (non-roadside patches)[2] OR | Minimum patch width (roadsides only)[3] |
|---|---|---|---|
| *Category A: Patches likely to correspond to a condition of Pristine / Excellent / Very good (Keighery, 1994) or a High RCV (RCC, 2014).* | | | |
| Exotic plant species account for 0 to 30% of total vegetation cover in the understorey layers (i.e. below the tree canopy). | Mature trees may be present or absent. | 2 hectares or more | 5 metres or more |
| *Category B: Patches likely to correspond to a condition of Good (Keighery, 1994) or a Medium-High RCV (RCC, 2014), AND retains important habitat features.* | | | |
| Exotic plant species account for more than 30, to 50% of total vegetation cover in the understorey layers (i.e. below the tree canopy) | Mature trees are present with at least 5 trees per 0.5 ha. | 2 hectares or more | 5 metres or more |
| *Category C: Patches likely to correspond to a condition of Good (Keighery, 1994) or a Medium-High RCV (RCC, 2014).* | | | |
| Exotic plant species account for more than 30, to 50% of total vegetation cover in the understorey layers (i.e. below the tree canopy). | Mature trees either absent or less than 5 trees per 0.5 ha are present. | 5 hectares or more | 5 metres or more |
| *Category D: Patches likely to correspond to a condition of Degraded to Good (Keighery, 1994) or a Medium-Low to Medium-High RCV (RCC, 2014) BUT retains important habitat features.* | | | |
| Exotic plant species account for more than 50 to 70% of total vegetation cover in the understorey layers (i.e. below the tree canopy). | Mature trees are present with at least 5 trees per 0.5 ha. | 5 hectares or more | 5 metres or more |

[1] Mature trees have a diameter at breast height (dbh) of 30 cm or above. Trunk diameter varies among eucalypt species, for instance gimlet and mallets tend to have slender trunks (Gosper et al., 2013b).The dbh for mature trees aligns with the EPBC referral guidelines for the breeding habitat of threatened black cockatoo species (DSEWPaC, 2012). These note that, for salmon gum and wandoo trees, suitable nest hollows can develop in trees with a dbh of 30 cm or more. Note that larger trees may be killed by factors such as intense fire or flood but the patch may still be in reasonable condition if there are immature trees regenerating.

[2] The minimum patch size thresholds apply to native vegetation remnants that do not occur along roadsides.

[3] Minimum patch width applies only to vegetation remnants along roadsides and tend to be long but narrow. This criterion recognises the importance of native vegetation remnants along road verges, e.g their value as wildlife corridors particularly if linking to other non-roadside remnants, habitat for threatened species and other reasons as detailed by Jackson (2002) and RCC (2015). The width here is based on the native understorey component rather than width of the tree canopy. Some allowance must be made for small breaks or variations in native species cover along linear patches. Given the generally open nature of the tree canopy and some understorey structures, a break in the continuity of native vegetation cover of 50 metres or more, is likely to indicate that separate patches are present. An exception is for main, often bitumen-covered, roads that bisect otherwise continuous vegetation; most local government roads in the wheatbelt have a road reserve of 20 metres. In these cases, native vegetation along either side of the road is considered to be a separate patch.

# 4 Vegetation Assessment

## 4.1 Site Description

The site inspection revealed that the vegetation on the site consists of *Eucalyptus loxophleba* subsp. *loxophleba* (York Gum) over a mostly weedy understorey with grassy weeds such as Veldtgrass (*Ehrharta calycina*) and Wild Oats (*Avena fatua*) the most common species. The trees are around 8-15m high with a percentage canopy cover around 10-15%. The trees included single-stemmed plants as well as many multi-stemmed plants with 2-5 trunks. Unlike most wheatbelt woodland trees *Eucalyptus loxophleba* subsp. *loxophleba* can be multi-stemmed or single-stemmed. According to the Eucalypt Woodland TEC Conservation Advice a multi-stemmed *Eucalyptus loxophleba* subsp. *loxophleba* plant is still considered a tree rather than a mallee.

Plates 4 – 8 show the vegetation on the site.

**Plate 4: Southern area**

**Plate 5: North-west area**

**Plate 6: North-east area**

**Plate 7: South-east area**

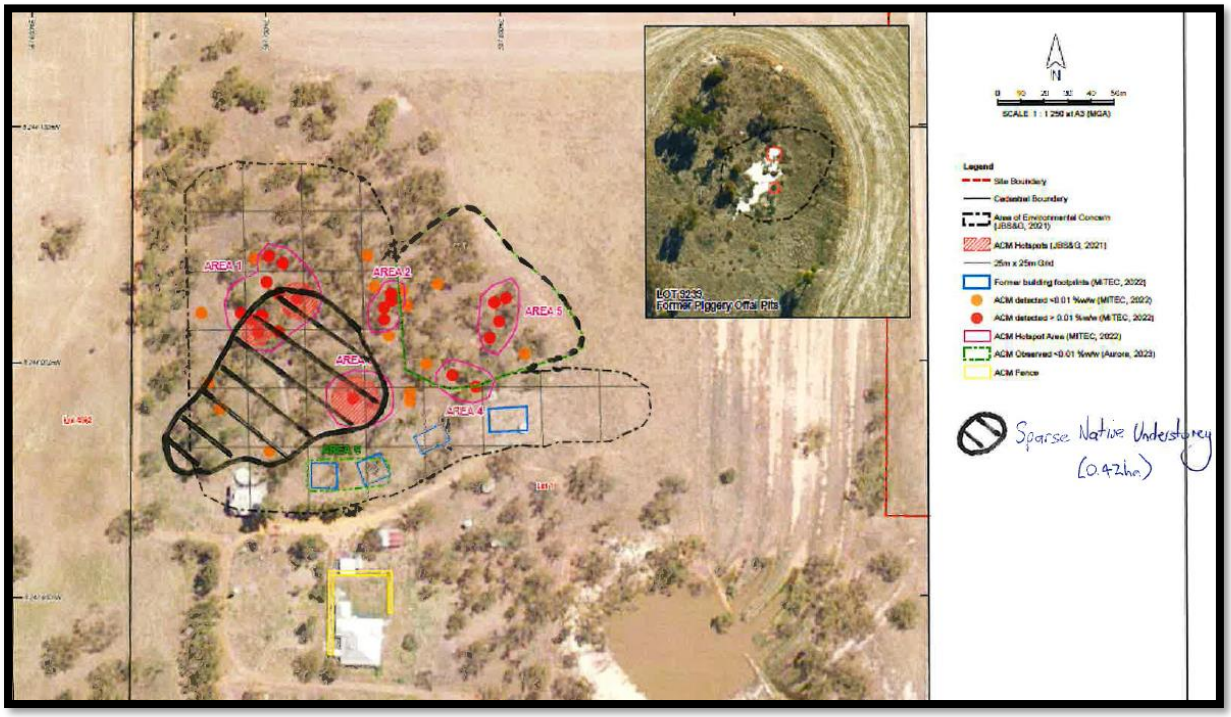
The introduced herb *Atriplex prostrata* was common in the understorey. The native prostrate shrub *Enchylaena tomentosa* (Barrier Saltbush) was common in the central part of the site.

One small stand of the native shrub species *Maireana brevifolia* (Small Leaf Bluebush) occurred on the site in an area of around 5m x 5m (Plate 8).

**Plate 8: Small stand of *Maireana brevifolia***

Overall, the percentage cover of native understorey was rated as 2-5% in the area shown on Plate 9 and 0% outside that central area. The area shown on Plate 9 with sparse native understorey is around 0.42ha in size.

**Plate 9: Area containing some native understorey**




No other native understorey species were recorded on the site and no other native ephemeral species are expected to occur on the site in spring.

The condition of the vegetation was assessed according to the system devised by Keighery and described in Bush Forever (Government of Western Australia, 2000) (Table 1).

**Table 1: Vegetation Condition Rating Scale.**

| Condition | Description |
|---|---|
| Pristine | Pristine or nearly so, no obvious signs of disturbance. |
| Excellent | Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species. |
| Very Good | Vegetation structure altered, obvious signs of disturbance.<br>For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing. |
| Good | Vegetation structure significantly altered by very obvious signs of multiple disturbance. Retains basic vegetation structure or ability to regenerate it.<br>For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and grazing. |
| Degraded | Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management.<br>For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing. |
| Completely Degraded | The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs. |

Source: Government of Western Australia, 2000.

The condition of the vegetation throughout the site was rated as Completely Degraded.

### 4.2 Assessment Against Eucalypt Woodland TEC Key Criteria

The patch of *Eucalyptus loxophleba* subsp. *loxophleba* Woodland on the site meets the initial key diagnostic criteria to be the Eucalypt Woodland PEC for the following reasons:

- The site is within the Mallee (MAL02) IBRA Bioregion;
- The vegetation structure is a Woodland; and
- The dominant tree species, *Eucalyptus loxophleba* subsp. *loxophleba,* is one of the 31 key eucalypts species that define the community.

A patch of Eucalypt woodland needs to meet a minimum patch size depending on the condition of the vegetation to be the Eucalypt Woodland PEC. The condition of the vegetation on the site was rated as Completely Degraded. The condition thresholds in the Conservation Advice do not include Completely Degraded vegetation condition. The lowest condition is Category D – Degraded to Good.

It could be assumed that vegetation in Completely Degraded condition is not the Eucalypt Woodland PEC/TEC regardless of the size of the patch. However, as this is not stated in the Conservation Advice we have used the Degraded to Good category.

Using the Degraded to Good category a patch of Eucalypt woodland must be at least 5ha in size and there must be at least 5 mature trees per 0.5ha. A mature tree is one with a diameter at breast height (dbh) of at least 30cm.

The trees on the site are mostly multi-stemmed trees with a dbh of each trunk less than 30cm. There are less than 5 mature trees per 0.5ha. Plate 10 shows a typical group of *Eucalyptus loxophleba* subsp. *loxophleba* trees with stems <30cm dbh.

**Plate 10: Typical stem diameter of trees on site**

The York Gum trees in and around the old household consist of two distinct stands, one to the north of the house and one to the east of the house surrounding a large dam. The size of the northern stand is around 2.6ha and the size of the eastern stand around 2.0ha. If considered as two separate patches the size of the patches is below the minimum 5ha required to meet the Eucalypt Woodland PEC criteria. If the stands are considered as one patch, PGV Environmental has calculated that the size of the patch is around 4.57ha which is also below the minimum 5ha required to meet the Eucalypt Woodland PEC criteria.

## 5 Clearing Permit Advice

A clearing permit is required to clear native vegetation in Western Australia unless an exemption applies under Schedule 6 of the *Environmental Protection Act 1986* (EP Act) or under the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Regulations). PGV Environmental does not believe that a Schedule 6 exemption or an exemption under the Regulations would apply for the proposed works.

The native vegetation that would be cleared for the remediation works consists of the sparse cover of *Enchylaena tomentosa* and *Maireana brevifolia* shrubs. The area containing these native shrubs is around 0.42ha with an upper estimate of 5% cover. Therefore, a total of 0.02ha of native shrubs might be cleared.

If no exemptions apply, the Department of Water and Environmental Regulation (DWER) may assess the proposed clearing under Section 51DA(4) of the EP Act which provides an expedited permit for

small areas of not significant vegetation. For clearing to be assessed under a Section 51DA process DWER will consider the following:

- The area of application should be less than 1ha;
- The condition of the vegetation;
- Whether the proposed clearing area provides habitat for any conservation significant flora, fauna or vegetation;
- Whether the proposed clearing is part of a significant ecological linkage;
- Whether less than 30% of the vegetation association is remaining with the relevant IBRA bioregion; and
- Whether less than 30% of native vegetation is remaining within a 5km buffer of the proposed clearing.

PGV Environmental considers that there is far less than 30% of native vegetation remaining within a 5km buffer of the proposed clearing due to the high amount of clearing for broadscale agriculture. However, the condition of the vegetation to be cleared is Completely Degraded and does not represent a good example of the York Gum vegetation type in the Gnowangerup region. The less than 30% criteria within 5km should not apply to the vegetation in the remediation area.

## 6 Conclusions

The assessment of the vegetation in the area requiring ACM remediation has found the following:

- The vegetation is a *Eucalyptus loxophleba* subsp. *loxophleba* Woodland over a mostly weedy understorey;
- A central area of 0.42ha contains a sparse cover of native shrubs in the understorey. Only two native understorey species were recorded, *Enchylaena tomentosa* and *Maireana brevifolia*;
- The vegetation meets the initial key diagnostic criteria to be the Eucalypt Woodlands of the Western Australian Wheatbelt PEC at State level and TEC at Commonwealth level. However, the size of the patch of woodland and the low number of mature trees (<5/0.5ha) means the patch of woodland does not meet the size and condition requirements to be the PEC/TEC;
- Regardless of the PEC/TEC assessment, PGV Environmental understands that clearing for the ACM remediation will only require spraying and slashing of the grasses and sparse native shrubs which, given the Completely Degraded nature of the understorey with its zero to sparse coverage of native shrubs, would not impact on the ecological functioning of the eucalypt woodland on the site;
- No exemptions are considered to apply for a clearing permit for the proposed works;
- A Section 51DA expedited clearing permit for less than 1ha of non-significant vegetation may apply given the vegetation condition is Completely Degraded and does not represent a good example of intact remnant York Gum woodland in the Gnowangerup region: and
- If a Section 51DA application is not accepted, then a Purpose permit should be applied for the approximate 0.42ha of native understorey that needs to be cleared for the remediation works.

Please contact me if you require any clarification of this assessment and advice.

Yours sincerely

Paul van der Moezel
Managing Director