



GOVERNMENT OF
With Parliament
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 9087/1
File Number: DWERVT6744
Duration of Permit: From 22 December 2020 to 22 December 2022

PERMIT HOLDER

Thomas Cairns Pty Ltd

LAND ON WHICH CLEARING IS TO BE DONE

Lot 603 on Deposited Plan 62188, Julimar

AUTHORISED ACTIVITY

The permit holder must not clear more than 0.121 hectares of native vegetation within the area cross-hatched yellow in Figure 1 of Schedule 1.

CONDITIONS

1. Avoid, minimise, and reduce impacts and extent of clearing

In determining the native vegetation authorised to be cleared under this permit, the permit holder must apply the following principles, set out in descending order of preference:

- (a) avoid the *clearing* of native vegetation;
- (b) minimise the amount of *native vegetation* to be cleared; and
- (c) reduce the impact of *clearing* on any environmental value.

2. Weed and dieback management

When undertaking any *clearing* authorised under this permit, the permit holder must take the following measures to minimise the risk of introduction and spread of *weeds* and *dieback*:

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (b) ensure that no known *dieback* or *weed*-affected soil, *mulch*, *fill*, or other material is brought into the area to be cleared; and
- (c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

3. Records that must be kept

The permit holder must maintain records relating to the listed relevant matters in accordance with the specifications detailed in Table 1.

Table 1: Records that must be kept

No.	Relevant matter	Specifications
1.	In relation to the authorised <i>clearing</i> activities generally	(a) the species composition, structure, and density of the cleared area; (b) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings; (c) the date that the area was cleared; (d) the size of the area cleared (in hectares); and (e) actions taken to avoid, minimise, and reduce the impacts and extent of <i>clearing</i> in accordance with <i>condition 1</i> ; and (f) actions taken to minimise the risk of the introduction and spread of <i>weeds</i> and <i>dieback</i> in accordance with <i>condition 2</i> .

4. Reporting

The permit holder must provide to the *CEO* the records required under *condition 3* of this permit when requested by the *CEO*.

DEFINITIONS

In this permit, the terms in Table have the meanings defined.

Table 2: Definitions

Term	Definition
CEO	Chief Executive Officer of the <i>department</i> responsible for the administration of the <i>clearing</i> provisions under the <i>Environmental Protection Act 1986</i> .
clearing	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.
dieback	means the effect of <i>Phytophthora</i> species on native vegetation.
department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
EP Act	<i>Environmental Protection Act 1986</i> (WA).
fill	means material used to increase the ground level, or fill a hollow.

Term	Definition
mulch	means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation.
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
weeds	<p>means any plant –</p> <ul style="list-style-type: none"> (a) that is a declared pest under section 22 of the <i>Biosecurity and Agriculture Management Act 2007</i>; or (b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or (c) not indigenous to the area concerned.

END OF CONDITIONS



Meenu Vitarana
A/MANAGER
NATIVE VEGETATION REGULATION

*Officer delegated under Section 20
of the Environmental Protection Act 1986*

27 November 2020

SCHEDULE 1

The boundary of the area authorised to be cleared is shown in the map below (Figure 1).

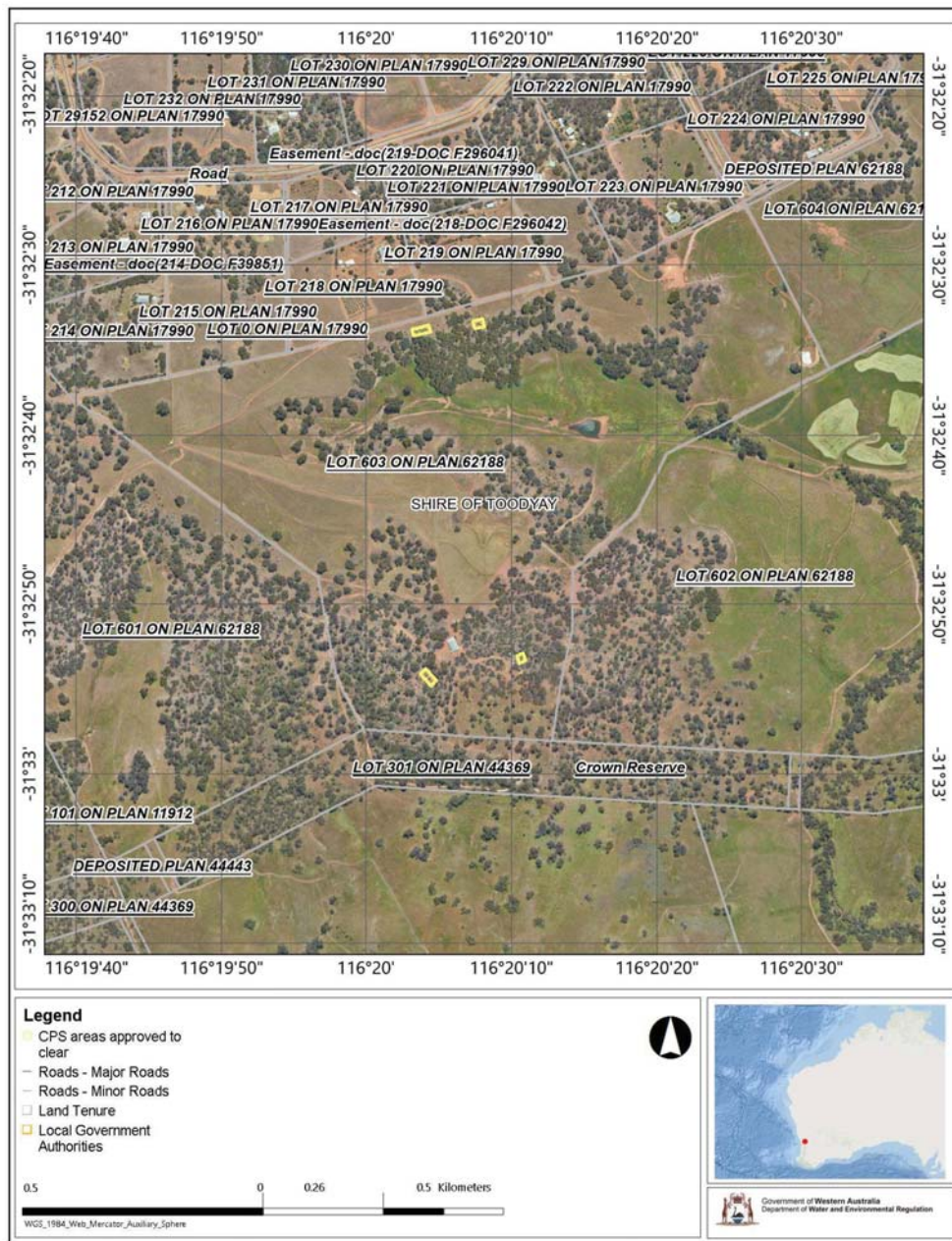


Figure 1: Map of the area within which clearing may occur.



Clearing Permit Decision Report

1. Application details and outcome

1.1. Permit application details

Permit number:	CPS 9087/1
Permit type:	Area permit
Applicant name:	Thomas Cairns Pty Ltd
Application received:	14 October 2020
Application area:	0.121 hectares, containing 30 native trees
Purpose of clearing:	Donation of grass trees to create native gardens at three nursing homes in Perth, to provide cultural benefits to resident Aboriginal Elders.
Method of clearing:	Mechanical
Property:	Lot 603 on Deposited Plan 62188, Julimar
Location (LGA area/s):	Shire of Toodyay
Localities (suburb/s):	Julimar

1.2. Description of clearing activities

The application is to selectively clear 0.121 hectares, containing up to 30 grass trees (*Xanthorrhoea* sp.) within Lot 603 on Deposited Plan 62188, Julimar, which will be transported to three nursing homes around Perth, to be re-planted in native gardens. The vegetation applied to be cleared is distributed across four separate areas within two contiguous patches of vegetation, with no more than 10 individual grass trees removed from each area (see Figure 1, Section 1.5).

1.3. Decision on application and key considerations

Decision:	Granted
Decision date:	27 November 2020
Decision area:	0.121 hectares (ha) of native vegetation, containing up to 30 native trees, as depicted in Section 1.5, below.

1.4. Reasons for decision

This clearing permit application was submitted, accepted, assessed and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Water and Environmental Regulation (DWER) advertised the application for 14 days and one submission was received. Consideration of matters raised in the public submission is summarised in Appendix A.

In making this decision, the Delegated Officer had regard for the site characteristics (see Appendix B), relevant datasets (see Appendix F), the clearing principles set out in Schedule 5 of the EP Act (see Appendix C), relevant planning instruments and any other matters considered relevant to the assessment (see Section 3). The Delegated Officer also took into consideration the public submission received and the social and cultural benefits associated with the purpose of the proposed clearing.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined the proposed clearing can be minimised and managed, and is unlikely to lead to an unacceptable risk to environmental values. The Delegated Officer decided to grant a clearing permit subject to standard avoid and minimise and weed and dieback management conditions.

1.5. Site map

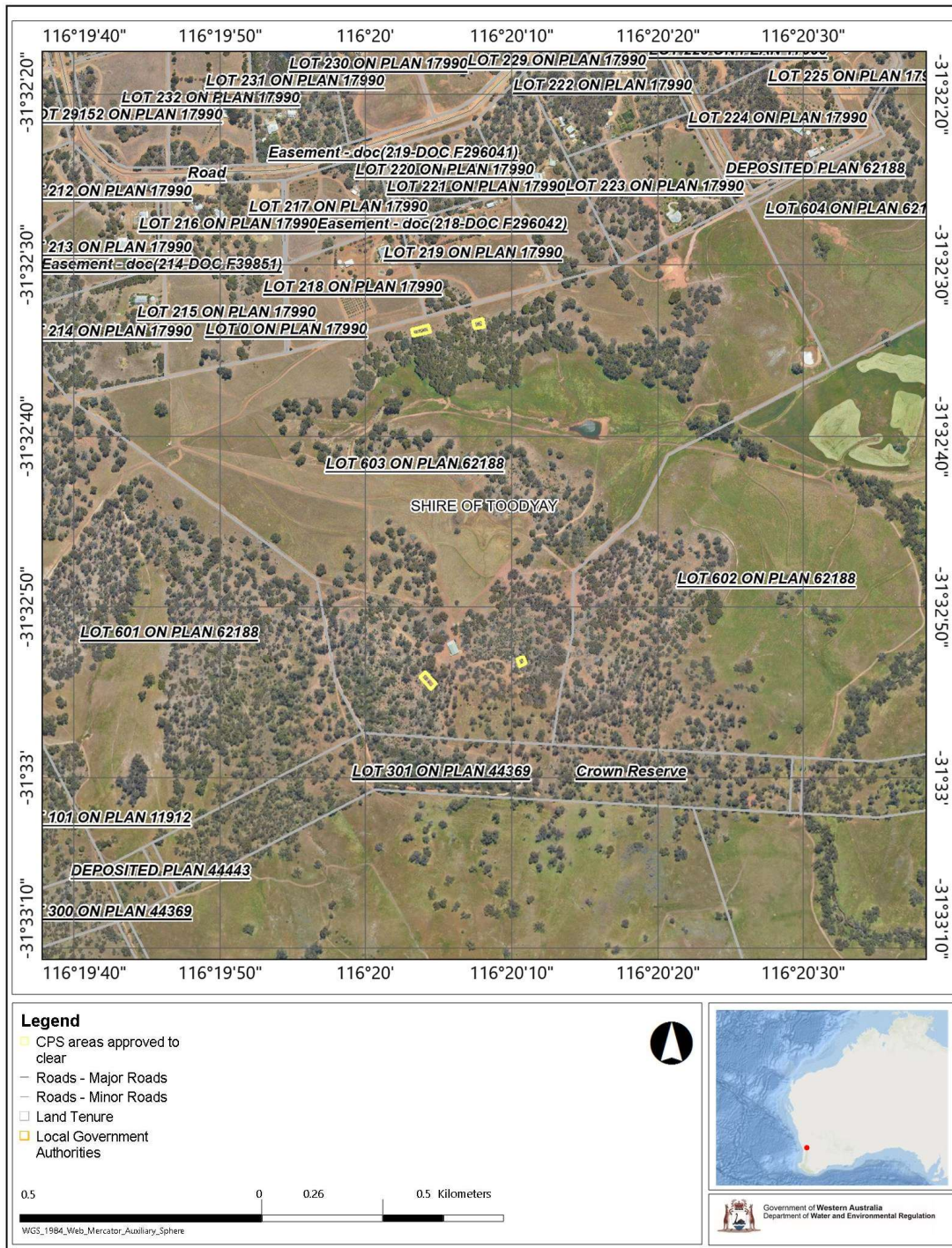


Figure 1. The areas cross-hatched yellow indicate the areas authorised to be cleared under the granted clearing permit.

2. Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

1. the precautionary principle;
2. the principle of intergenerational equity; and
3. the principle of the conservation of biological diversity and ecological integrity.

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)

3. Detailed assessment of application

3.1. Avoidance and mitigation measures

The Delegated Officer was satisfied that the applicant has made a reasonable effort to avoid and minimise potential impacts of the proposed clearing on environmental values, through selectively clearing the 30 individual grass trees from four separate areas within the property (Thomas Cairns Pty Ltd, 2020). This method ensures that no more than 10 grass trees will be removed from each clearing area and will minimise the localised impacts of the proposed clearing on environmental values (Thomas Cairns Pty Ltd, 2020). Given the grass trees will be removed manually by a landscaper with experience in the removal and re-planting of grass trees (Thomas Cairns Pty Ltd, 2020), it is expected that impacts to adjacent vegetation will be avoided.

3.2. Assessment of environmental impacts

In assessing the application in accordance with section 51O of the EP Act, the Delegated Officer has had regard to the site characteristics (see Appendix B for details) and the extent to which the impacts of the proposed clearing present a risk to biological, conservation, or land and water resource values.

The assessment against the clearing principles (see Appendix C for details) identified the impacts of the proposed clearing are limited and able to be managed to be environmentally acceptable with standard avoid and minimise, and weed and dieback management conditions.

3.3. Relevant planning instruments and other matters

The clearing permit application was advertised on the Department of Water and Environmental Regulation's website on 5 November 2020, inviting submissions from the public within a 14 day period. One submission was received in relation to this application (see Appendix A for details).

The Shire of Toodyay were invited to provide comment on the application; however, no comments were received.

No Aboriginal sites of significance have been mapped within the application area. It is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972* (WA) and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

Appendix A – Details of submissions

Summary of comments	Consideration of comment
<p>A submission was received that raised the following issues:</p> <ul style="list-style-type: none"> • The purpose of the clearing is not valid, given the grass trees could be sourced from areas currently cleared or being cleared. • Expertise is required to remove and transport grass trees to ensure their survival. There is the potential that the cleared grass trees could die given the contrasting soil types present between Toodyay and Perth. • The applicant has indicated that <i>'Taking the trees from various areas is a strategy to minimise the impact of the proposed clearing'</i>, in their application. Does this mean that the clearing of 30 grass trees is not the full extent of the clearing proposed? (Submission, 2020). 	<p>These comments have been considered as follows:</p> <ul style="list-style-type: none"> • The purpose of the proposed clearing is considered valid, given the social and cultural benefits associated with the native gardens proposed. While DWER recognises that there are other possible sources of grass trees for donation, the impacts of the proposed clearing are limited and able to be managed to be environmentally acceptable. Given this, the social and cultural benefits of the purpose, and the costs associated with sourcing the trees elsewhere, DWER considers it to be up to the applicant to decide how the trees will be sourced and whether the clearing is necessary. • It should be noted that the assessment of this application is limited to consideration of the environmental impacts, relevant planning instruments and other matters associated with the clearing of the grass trees. While DWER acknowledges the concerns raised, the fate of the grass trees post-clearing is outside the scope of this assessment. However, the method of removal of the grass trees and experience of the removalist was considered under <i>Avoidance and mitigation measures</i> (see Section 3.1) and was considered adequately justified. • It should also be noted that the clearing approved is limited to 30 grass trees only and no additional clearing is authorised if any trees do not survive. • The applicant's statement was to indicate that the 30 grass trees will be taken from four separate areas of their property, with no more than 10 individual grass trees removed from each area, in an effort to minimise localised impacts of the clearing (see Figure 1, Section 1.5). The areas proposed to be cleared under this application have been detailed under <i>Description of the clearing activities</i> (see Section 1.2) and <i>Avoidance and mitigation measures</i> (see Section 3.1). • The clearing of 30 grass trees is the full extent of clearing proposed under this application.

Appendix B – Site characteristics

The information provided below describes the key characteristics of the area proposed to be cleared and is based on the best information available to DWER at the time of this assessment. This information was used to inform the assessment of the clearing against the Clearing Principles, contained in Appendix C.

1. Site characteristics

Site characteristic	Details	
Local context	The proposed clearing area includes four separate areas comprising a total of 0.121 hectares containing up to 30 individual grass trees (<i>Xanthorrhoea</i> sp.) within two contiguous tracts of native vegetation. It is surrounded by freehold land, comprising a combination of previously cleared pasture and remnant vegetation. The proposed clearing areas are part of two larger areas of vegetation, comprising a total area of approximately 30 hectares. Spatial data indicates the local area (10 km radius of the proposed clearing area) retains approximately 54.52% of the original native vegetation cover.	
Vegetation description	<p>The proposed clearing area comprises 30 individual grass trees only, over a sparse weed understorey, with minimal adjacent native species. Aerial imagery and photographs supplied by the applicant indicates that the vegetation adjacent to the proposed clearing area comprises <i>Eucalyptus wandoo</i> woodland. Representative photos are available in Appendix E.</p> <p>This is consistent with the mapped vegetation types:</p> <ul style="list-style-type: none"> • Coolakin, which is described as woodland of <i>Eucalyptus wandoo</i> with mixtures of <i>Eucalyptus patens</i>, <i>Eucalyptus marginata</i> subsp. <i>thalassica</i> and <i>Corymbia calophylla</i> on the valley slopes in arid and perarid zones; and • Yalanbee which is described as woodland of <i>Eucalyptus wandoo-Eucalyptus accedens</i>, less consistently open forest of <i>Eucalyptus marginata</i> subsp. <i>thalassica-Corymbia calophylla</i> on lateritic uplands and breakaway landscapes in arid and perarid zones (Mattiske and Havel, 1998). 	
Vegetation condition	<p>Aerial imagery and photographs supplied by the applicant indicate that the vegetation within the proposed clearing area is in Good (Keighery, 1994) condition, described as vegetation structure significantly altered by very obvious signs of multiple disturbances, but retains basic vegetation structure or ability to regenerate it (Keighery, 1994). The proposed clearing area itself has been exposed to previous disturbance and weed invasion resulting from adjacent pastoral land uses and comprises 30 individual grass trees over a sparse weed understorey, with minimal adjacent native species.</p> <p>The full Keighery condition rating scale is provided in Appendix D, below. Representative photos are available in Appendix E.</p>	
Soil description	The soil is mapped within the Yalanbee Subsystem (253WnYA), described as residual plateau at the top of the landscape shallowly dissected by Pindalup valleys. Pisolitic gravelly, yellowish brown soils that vary in texture from loamy sands to clays, with pockets of pale sands and areas of outcropping laterite (DPIRD, 2017).	
Land degradation risk	Risk categories	Yalanbee Subsystem (253WnYA)
	Wind erosion	>70% of map unit has a high to extreme wind erosion risk
	Water erosion	<3% of map unit has a high to extreme water erosion risk

Site characteristic	Details	
	Salinity	<3% of map unit has a moderate to very high salinity risk or is presently saline
	Subsurface Acidification	>70% of map unit has a high subsurface acidification risk or is presently acid
	Flood risk	<3% of the map unit has a moderate to very high flood risk
	Waterlogging	<3% of map unit has a moderate to very high waterlogging risk
	Phosphorus export risk	3-10% of map unit has a high to extreme phosphorus export risk
Waterbodies	<p>The desktop assessment and aerial imagery indicated that no mapped waterbodies or wetlands occur within the application area. However, several minor, non-perennial tributaries of the Avon River occur within 100 to 150 metres of the application area.</p> <p>The application area is mapped within Avon River Catchment Area, a surface water area proclaimed under the <i>Rights in Water and Irrigation Act 1914</i> (the RIWI Act). No proclaimed Groundwater Areas or Public Drinking Water Source Areas occur within the application area.</p>	
Conservation areas	<p>The proposed clearing area occurs in connected vegetation within 100 metres of an unmanaged Class C Reserve 2165, which is utilised as a travelling stock route.</p> <p>The application area also occurs approximately 4.5 kilometres south-west of the Julimar Sate Forest and approximately 6.5 kilometres east of the Avon Valley National Park but is separated from these areas by previously cleared land and road infrastructure.</p>	
Climate and landform	<p>The proposed clearing area occurs in undulating topography.</p> <p>The average rainfall and evapotranspiration rate for the area is 700 millimetres. Annual mean maximum temperature is 25.4°C and annual mean minimum temperature is 10.9°C.</p>	

2. Flora, fauna and ecosystem analysis

With consideration for the site characteristics set out above, the nature of the proposed clearing, and relevant datasets (see Appendix F), conservation significant flora species, fauna species, and ecological communities are not considered likely to be impacted by the clearing.

3. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	% remaining	Current extent in all DBCA managed land (ha)	% current extent in all DBCA managed land (proportion of pre-European extent)
IBRA bioregion**					
Jarrah Forest	4,506,660.25	2,399,838.15	53.25	1,673,614.25	37.14
South West vegetation complexes*					
Coolakin	163,991.68	64,204.65	39.15	33,002.38	20.12
Yalanbee	324,458.79	175,909.99	54.22	90,814.70	27.99
Local area					
10 kilometre radius	17,701.11	32,465.24	54.52	-	-

*Government of Western Australia (2019a)

**Government of Western Australia (2019b)

Appendix C – Assessment against the Clearing Principles

Assessment against the Clearing Principles	Variance level	Is further consideration required?
Environmental value: biological values		
<p><u>Principle (a):</u> “Native vegetation should not be cleared if it comprises a high level of biodiversity.”</p> <p><u>Assessment:</u> The proposed clearing area includes up to 30 individual grass trees and does not contain locally or regionally significant flora, fauna, habitats, ecological communities, or ecological linkages. The proposed clearing area does not comprise a high level of biodiversity.</p>	Not likely to be at variance	No
<p><u>Principle (b):</u> “Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna.”</p> <p><u>Assessment:</u> The proposed clearing area comprises up to 30 individual grass trees within a contiguous 30-hectare patch of vegetation, which are not considered likely to provide significant foraging, roosting, breeding, or linkage habitat for any conservation significant fauna species.</p>	Not likely to be at variance	No
<p><u>Principle (c):</u> “Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</p> <p><u>Assessment:</u> The proposed clearing area includes up to 30 individual grass trees only and is unlikely to contain or provide significant habitat for any flora species listed under the BC Act.</p>	Not likely to be at variance	No
<p><u>Principle (d):</u> “Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.”</p>	Not likely to be at variance	No

Assessment against the Clearing Principles	Variance level	Is further consideration required?
<p><u>Assessment:</u> The proposed clearing area comprises up to 30 individual grass trees over weed species, and is not consistent with any threatened ecological community listed under the BC Act 2016.</p>		
<p>Environmental values: significant remnant vegetation and conservation areas</p>		
<p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u> The extent of the mapped vegetation types and native vegetation in the local area is consistent with the national objectives and targets for biodiversity conservation in Australia (see Appendix B). The proposed clearing area includes up to 30 individual grass trees within a contiguous 30-hectare patch of vegetation and is not considered to be part of a significant ecological linkage in the local area.</p>	Not likely to be at variance	No
<p><u>Principle (h):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.”</i></p> <p><u>Assessment:</u> Given the distance to the nearest conservation area and that the proposed clearing will remove up to 30 individual grass trees only, the proposed clearing is not likely to have an impact on the environmental values of any nearby conservation areas.</p>	Not likely to be at variance	No
<p>Environmental values: land and water resources</p>		
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u> Given the proposed clearing area occurs within 100 metres of several minor, non-perennial water courses, the vegetation may be growing in, or in association with, an environment associated with a watercourse or wetland. However, the proposed clearing will remove up to 30 individual grass trees within a 30-hectare contiguous patch of vegetation. Given the extent of the proposed clearing, it is not considered likely that the clearing will impact on- or off-site hydrology and water quality within these non-perennial watercourses, or significantly impact the riparian communities associated with them.</p>	May be at variance	No
<p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u> The mapped soils are not susceptible to land degradation resulting from water erosion, salinity, flooding, waterlogging or phosphorus export, but are mapped as high risk for wind erosion and subsurface acidification. However, the proposed clearing will remove up to 30 individual grass trees within a 30-hectare contiguous patch of vegetation. Noting that the clearing proposed is small in extent and that the trees will be removed from four separate areas within the contiguous patch, the proposed clearing is not likely to have an appreciable impact on land degradation.</p>	Not likely to be at variance	No
<p><u>Principle (i):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.”</i></p> <p><u>Assessment:</u> The proposed clearing area is mapped within the Avon River Catchment and occurs within 100 metres of several minor, non-perennial water courses. However, noting that the proposed clearing area comprises</p>	Not likely to be at variance	No

Assessment against the Clearing Principles	Variance level	Is further consideration required?
up to 30 individual grass trees from four separate areas within a contiguous 30-hectare patch of vegetation, it is not considered likely that the proposed clearing will impact the quality of surface or underground water within these areas.		
<p><u>Principle (j):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p> <p><u>Assessment:</u> The mapped soils and topographic contours in the surrounding area do not indicate that the proposed clearing is likely to contribute to flooding or waterlogging. Given this, it is not considered likely that the removal of 30 individual grass trees from four separate areas within a 30-hectare contiguous patch of vegetation, will cause, or exacerbate, the incidence or intensity of flooding.</p>	Not likely to be at variance	No

Appendix D – Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation's ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

Measuring Vegetation Condition for the South West and Interzone Botanical Province (Keighery, 1994)

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

Appendix E – Photographs of the vegetation





Figure 2. Representative photographs of vegetation proposed to be cleared under CPS 9087/1 (Thomas Cairns Pty Ltd, 2020).

Appendix F – References and databases

1. GIS datasets

Publicly available GIS Databases used (sourced from www.data.wa.gov.au):

- Aboriginal Heritage Places (DPLH-001)
- Bush Forever Areas 2000 (DPLH-019)
- Cadastre Address (LGATE-002)
- CAWSA Part 2A Clearing Control Catchments (DWER-004)
- Consanguineous Wetlands Suites (DBCA-020)
- Contours (DPIRD-073)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- DBCA Statewide Vegetation Statistics
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- Geomorphic Wetlands, Swan Coastal Plain (DBCA-019)
- Groundwater Salinity Statewide (DWER-026)
- Hydrography Linear (Hierarchy) (DWER-031)
- IBRA Vegetation Statistics
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Vegetation Extent (DPIRD-005)
- Pre-European Vegetation (DPIRD-006)
- Public Drinking Water Source Areas (DWER-033)
- Regional Parks (DBCA-026)
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Rivers (DWER-036)

- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil and Landscape Mapping – Best Available
- Soil Landscape Land Quality datasets
- Vegetation Complexes – South West forest region of Western Australia (DBCA-047)

Restricted GIS Databases used:

- ICMS (Incident Complaints Management System)– Points and Polygons
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities

2. References

Commonwealth of Australia (2001) *National Objectives and Targets for Biodiversity Conservation 2001-2005*, Canberra.

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Government of Western Australia. (2019b) *2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019*. WA Department of Biodiversity, Conservation and Attractions. <https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics>.

Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Mattiske, E.M. and Havel, J.J. (1998) *Vegetation Complexes of the South-west Forest Region of Western Australia*. Maps and report prepared as part of the Regional Forest Agreement, Western Australia for the Department of Conservation and Land Management and Environment Australia.

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