Clearing Desktop Report – CPS 818

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Bromus Material Investigation 2021

January 2021

EOS 2290

D21#78850

Contents

Amendments

Report Compilation & Review	Name and Position	Document Revision	Date
Author:	Environment Officer	Draft v1	8/01/2021
Reviewer:	Environment Contractor	Rev 0	21/01/2021

1 PURPOSE

This Clearing Desktop Report (CDR) is a desktop assessment of native vegetation clearing that is proposed to be undertaken using the Statewide Clearing Permit CPS 818 issued to Main Roads Western Australia (Main Roads).

2 SCOPE

2.1 Project Scope

Project Name: Bromus Material Investigation 2021

Project Purpose / Components: The purpose of this project is to identify suitable areas that can be used as material pits for future road building projects along Coolgardie Esperance Hwy in the Shire of Dundas. The project involves using a backhoe to dig a number of test pits so that suitable road building materials can be identified and material pits defined. The outcome will be the delineation of material pits and associated access tracks.

The proposed clearing under CPS 818 is: 3 hectares (ha) within a 616 ha material investigation area ('Project area').

The proposed temporary clearing under CPS 818 is: 0 ha.

Project Location(s): The Project area is located on Coolgardie Esperance Hwy

2.2 Desktop Assessment Scope

The environmental assessment area ('Study area') is confined to a local area of a 20 km radius.

2.3 Alternatives to Clearing

Commercial sources of material and existing cleared areas with gravel potential were considered. None were identified within 50 km of this section of Coolgardie Esperance Hwy that would make such sources economically viable.

2.4 Measures to Avoid, Minimise, Mitigate and Manage Project Clearing Impacts

The design and management measures implemented to avoid and minimise the project clearing impacts are provided in Table 1.

Table 1. Justification of Avoiding, Minimising, Mitigating and Managing Project Clearing Impacts

Design or Management Measure	Discussion and Justification
Steepen batter slopes	Not relevant to this type of project – materials investigation.
Installation of safety barriers	Not relevant to this type of project – materials investigation.
Alignment to one side of existing road	Not relevant to this type of project – materials investigation.
Alternative alignment to follow existing road (or) to preferentially locate within pasture or a degraded area	Not relevant to this type of project – materials investigation.
Installation of kerbing	Not relevant to this type of project – materials investigation.
Simplification of design to reduce number of lanes and/or complexity of intersections	Not relevant to this type of project – materials investigation.

Design or Management Measure	Discussion and Justification
Preferential use of existing cleared areas for access tracks, construction storage and stockpiling	Existing tracks will be used to gain access and move through the investigation areas.
Drainage modification	Not relevant to this type of project – materials investigation.

2.5 Approved Policies and Planning Instruments

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 1.3), Main Roads has also had regard to:

EPPs

- Environmental Protection (Peel Inlet - Harvey Estuary) Policy 1992;
- Environmental Protection (Western Swamp Tortoise Habitat) Policy 2011

Relevant other policies and guidance documents:

- The Western Australian Environmental Offsets Policy (Government of Western Australia, 2011)
- A guide to the assessment of applications to clear native vegetation (DWER, December 2014)
- Procedure: Native vegetation clearing permits (DWER, October 2019)
- Environmental Offsets Guidelines (Government of Western Australia, August 2014)
- Technical guidance – Flora and Vegetation Surveys for Environmental Impact Assessment (EPA, 2016)
- Technical guidance – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment (EPA, 2020)
- Approved conservation advice under section 266B of the EPBC Act for threatened flora/fauna/vegetation communities
- Approved Recovery Plans for threatened species
- EPBC Act Referral guidelines for the three threatened black cockatoo species
- Strategic advice - EPA

Other Legislation of relevance for assessment of clearing and planning/other matters

- Biodiversity Conservation Act 2016 (WA) (BC Act)
- Conservation and Land Management Act 1984 (WA) (CALM Act)
- Country Areas Water Supply Act 1947 (WA) (CAWS Act)
- Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act)
- Planning and Development Act 2005 (WA) (P&D Act)
- Soil and Land Conservation Act 1945 (WA)
- Rights in Water and Irrigation Act 1914 (WA)
- Aboriginal Heritage Act 1972 (WA)
- Town Planning and Development Act 1928 (WA)

3 Methodology

3.1 Desktop Study

A desktop assessment of the Project area and an assessment of native vegetation clearing were undertaken by reviewing a number of government agency managed databases, viewing GIS shapefiles and consulting with relevant stakeholders where necessary. Results from searches can be found in the relevant Appendix.

GIS layer viewing and mapping was carried out using ArcMap and / or Main Roads Integrated Mapping System (IMS). The GIS layers reviewed are referenced in the relevant methodology section of each clearing principle. Government managed databases, searched to locate additional information, are referenced in Section 7.

4 VEGETATION DETAILS

4.1.1 Project Site Vegetation Description

Predominantly Eucalyptus woodland over mixed shrub understorey of *Melaleuca* sp., *Acacia* sp., *Allocasuarina* sp. Pockets of *Acacia*, *Melaleuca*, and *Allocasuarina* shrubland. Some areas were regenerating from fire approximately 4 years ago. The Project area's pre-European vegetation associations and their current spatial extent are summarised in Tables 2 and 3, respectively.

Table 2. Summary of Project Area's Mapped Pre-European Vegetation Associations

Pre-European Vegetation Association(s)	Clearing Description	Vegetation Condition	Comments
128 – Bare areas; rock outcrops 522 – Medium woodland; redwood (*Eucalyptus transcontinentalis*) & merrit (*E. floctoniae*) 551 – Shrublands; *Allocasuarina campestris* thicket 1413 – Shrublands; *Acacia*, *Casuarina* & *Melaleuca* thicket 3106 – Medium woodland; salmon gum & Dundas blackbutt	Clearing of up to 3 ha for the purpose of material investigation to find suitable road building material.	Excellent to Good (EPA 2016)	Vegetation description and condition determined from Main Roads site visit on 9/12/2020 (Appendix A).

Table 3. Pre-European Vegetation Representation

Pre-European Vegetation Association	Scale	Pre–European (ha)	Current Extent (ha)	% Remaining	% Remaining in DBCA reserves
Veg Assoc No. 128 Bare areas; rock outcrops	**Statewide**	329 836	288 813	87	19
	IBRA Bioregion Coolgardie	184 549	183 891	99	18
	IBRA Sub-region Eastern Goldfield	26 871	26 853	99	6
	Local Government Authority Shire of Dundas & Shire of Esperance	64 127	60 512	94	19
Veg Assoc No. 522 Medium woodland; redwood (*Eucalyptus transcontinentalis*) & merrit (*E. floctoniae*)	**Statewide**	709 714	709 228	99	5.5
	IBRA Bio region Coolgardie	688 406	687920	99	5.7
	IBRA Sub-region Eastern Goldfield	208 175	207 714	99	2
	Local Government Authority Shire of Dundas & Shire of Esperance	394 009	393 973	99	0.3
Veg Assoc No. 551 Shrublands; *Allocasuarina campestris* thicket	**Statewide**	302 423	83 684	27	6.5
	IBRA Bioregion Coolgardie	31 710	27 171	85	50
	IBRA Sub-region Eastern Goldfield	844	844	100	NA
	Local Government Authority Shire of Dundas & Shire of Esperance	1 271	1 271	100	NA
Veg Assoc No. 1413 Shrublands; *Acacia*, *Casuarina* & *Melaleuca* thicket	**Statewide**	1 679 916	1 286 855	76	13
	IBRA Bioregion Coolgardie	1 061 212	1 042 553	98	18
	IBRA Sub-region Eastern Goldfield	107 974	107 727	99	7.5
	Local Government Authority Shire of Dundas & Shire of Esperance	314 843	313 723	99	1
Veg Assoc No. 3106 Medium woodland; salmon gum & Dundas blackbutt	**Statewide**	52 660	51 602	97	7.6
	IBRA Bioregion Coolgardie	52 659	51 601	97	7.6
	IBRA Sub-region Eastern Goldfield	52 659	51 601	97	7.6
	Local Government Authority Shire of Dundas & Shire of Esperance	52 550	51 602	97	7.6

5 Assessment Against the Ten Clearing Principles

The Project was assessed against the ten Clearing Principles (*Environmental Protection Act 1986* (EP Act), Schedule 5) to determine whether it is likely to have a significant impact on the environment.

Each principle was assessed in accordance with DWER's 'A Guide to the Assessment of Applications to Clear Native Vegetation' (DER 2014).

Based on this assessment, it was determined that the proposed clearing is not likely to be at variance with any of the 10 Clearing Principles.

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

Comments	**Proposed clearing is not likely to be at variance to this Principle**
	The Project area contains two broad vegetation types; *Eucalyptus* woodland over mixed shrubs and grasses, and Shrublands containing *Allocasuarina, Melaleuca* and *Acacia* (MRWA, 2020). Condition is described as Good to Excellent (EPA, 2016). The northern Project area and top corner of southern Project area have been impacted by fire approximately four years ago and are now regenerating. There are several records of priority flora in the Study area, with one species, *Acacia hystrix* subsp. c*ontinua* (P1) recorded in the Project area. *A. hystrix* subsp. c*ontinua* is a low shrub that grows to 1.0m high. Its typically grows in clay loam in *Eucalyptus* woodland with a dense myrtaceaous understorey (WA Herbarium 2021). This vegetation type is widely distributed across the Project area (Appendix A) so it is highly likely that *A. hystrix* subsp. c*ontinua* is locally common. A 100 m buffer will be placed around the known location of the *A. hystrix* subsp. c*ontinua* population to prevent impacts to this species. With clearing for the proposed works limited to 4m^2 patches spaced 50 metres apart, there is a low probability of significant impacts to conservation significant flora species. It is considered significant changes to any populations of these species is highly unlikely given the homogeneity of the surrounding vegetation, the priority species are found over a wider local area, and the proposed clearing is small patches spaced over a large area. There is one PEC, the '*Allocasuarina globosa* assemblages on greenstone rock', located more than 20 km north-west of the Project area. The Project area does not contain a greenstone belt, the underlying geology is Yilgarn craton granite, so the vegetation assemblage used to define this PEC would not be found in the Project area. There is one known record of threatened fauna in the Project area, Malleefowl. A heritage survey conducted over the entire Project area found two Malleefowl mounds that had been inactive for a long period (Cecci, 2020). These Malleefowl mounds will have a 50 m exclusion zone placed around them to avoid potential impacts. Fauna recorded in the Study area include the Common Sandpiper, Red-necked Stint, Peregrine falcon, Western brush wallaby, Blue-billed duck, Hooded plover and inland Western Rosella. It is considered unlikely that the small amount of clearing (3 ha spaced over 50 metre intervals within the 616 ha Project area) will not significantly impact important breeding or foraging habitat for these species as the habitat values are well represented locally due to no large scale clearing in the Study area.

	Given the area to be cleared is small in relation to the spatial extent of similar vegetation assemblages, does not constitute conservation significant ecological communities, is unlikely to remove significant populations of conservation significant flora, and the threatened fauna species, Malleefowl, can be readily avoided, the proposed clearing is not likely to be at variance to this principle.
Methodology	DPAW and DWER shapefiles MRWA (2020) DMIRS (2021)

(b) 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 indigenous to Western Australia.

Comments	**Proposed clearing is not likely to be at variance to this Principle**
	Three main fauna habitats were identified during the site investigation. *Eucalyptus* woodland over mixed shrubs and grasses, shrublands containing *Allocasuarina, Melaleuca* and *Acacia*, and areas damaged by fire undergoing regrowth (MRWA, 2020). The two intact vegetation associations provide suitable habitat for a range of bird species, with the amount of cover also providing habitat for small fauna. The areas impacted by fire are open with limited foliage cover and so provide limited habitat for fauna. The clearing proposed is up to 3 ha within the larger 616 ha Project area. Investigation work involves clearing for test pits at 50 metre intervals with some clearing required to get access to each test area. The majority of vegetation will be left as it was and so fauna habitat and connectivity in the landscape will not be significantly changed from what is currently available. With the small amount of clearing over a large area, significant fauna habitat is unlikely to be impacted given the large areas remaining in similar condition. There is two DBCA records of sightings from 2006 of Malleefowl in the Project area. A heritage survey conducted over the entire Project area found two Malleefowl mounds that have been inactive for a long period (Cecci, 2020). These mounds will have a 50 metre exclusion zone placed around them to avoid potential impacts. Fauna recorded in the Study area include the Common Sandpiper, Red-necked Stint, Peregrine falcon, Western brush wallaby, Blue-billed duck, Hooded plover and inland Western Rosella. It is considered unlikely that the small amount of clearing (3 ha spaced over 50 metre intervals within the 616 ha Project area) will significantly impact important breeding or foraging habitat for these species as the habitat values are well represented locally due to no large scale clearing in the Study area. Given the above it is considered the proposal is not likely at variance to this principle.
Methodology	DBCA Shapefiles DBCA website MRWA (2020)

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

Comments	Proposal is not likely to be at variance to this Principle
	There are no known records of rare flora within the Study area. The only known rare flora from the local region is *Daviesia macrocarpa*, *Eucalyptus merrickiae* and *Allocasuarina globosa. Daviesia microcarpa* is known from one population near Norseman (40km from Project area) and is found alongside watercourses. *Eucalyptus merrickiae* is known from the mallee region approximately 50 km south of the Project area and is found close to salt lakes. As exploration will not occur near watercourses or wetlands it is unlikely that these species will be impacted. *Allocasuarina globosa* is located on assemblages of greenstone rock, located more than 20 km north-west of the Project area. The Project area does not contain a greenstone belt, the underlying geology is Yilgarn craton granite, so this species is not likely to be found in the Project area. Consequently, it is considered unlikely rare flora or its associated flora habitat will be impacted by the proposal. Therefore, the proposal is not likely at variance to this principle.
Methodology	DBCA shapefiles Florabase (Accessed 14/1/2021) MRWA (2020)

(d) 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.

Comments	Proposed clearing is not likely to be at variance to this Principle
	In the list of TECs endorsed by the Minister for the Environment (June 2018), none are found in the Coolgardie IBRA region. Therefore, the proposed clearing is not likely to be at variance to this Principle.
Methodology	DBCA shapefiles DBCA (2018)

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

Comments	**Proposed clearing is not likely to be at variance to this Principle**

The Project area contains two broad vegetation types; *Eucalypt* woodland over mixed shrubs and grasses, and Shrublands containing *Allocasuarina, Melaleuca* and *Acacia*. Condition is described as Good to Excellent (EPA, 2016). The Project areas contains vegetation that aligns with the mapped vegetation associations in the table below (see Appendix A. As the table below shows vegetation remaining across the IBRA sub-region and local government areas is above 97%, with marginally less remaining in the Coolgardie bioregion. The Project area is not in a location that has had extensive clearing.

The local area surrounding the Project area is well vegetated and contains large tracts of intact vegetation in similar condition (see figure 2). Habitat value is similar across the local area so the Project area is unlikely to be more significant. Given the amount of vegetation remaining and the small amount of clearing proposed, linkages in the landscape will not be significantly altered. Given the above, it is considered the proposed clearing does not contain significant remnant vegetation and is not within an area that has been extensively cleared. Therefore, the proposed clearing is not likely to be at variance to this principle.

Pre-European Vegetation Representation

Pre-European Vegetation Association	Scale	Pre–European (ha)	Current Extent (ha)	% Remaining	% Remaining in DBCA reserves
Veg Assoc No. 128 Bare areas; rock outcrops	**Statewide**	329 836	288 813	87	19
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	IBRA Sub-region Eastern Goldfield	208 175	207 714	99	2
	Local Government Authority	394 009	393 973	99	0.3

	s) & merrit (E. floctoniae)	**Shire of Dundas & Shire of Esperance**				
	Veg Assoc No. 551 Shrublands; Allocasuarina campestris thicket	**Statewide**	302 423	83 684	27	6.5
		IBRA Bioregion Coolgardie	31 710	27 171	85	50
		IBRA Sub-region Eastern Goldfield	844	844	100	NA
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	Veg Assoc No. 1413 Shrublands; acacia, casuarina & melaleuca thicket	**Statewide**	1 679 916	1 286 855	76	13
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		Local Government Authority Shire of Dundas & Shire of Esperance	52 550	51 602	97	7.6
Methodology	Government of Western Australia (2019) Skyview imagery EPA (2016) MRWA (2020)					

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Comments	**Proposed clearing is not likely to be at variance to this Principle**
	Two mapped, minor, non-perennial watercourses intersect the northern Project area. The area where the watercourse intersects the northern Project area will be avoided during the investigation. Therefore, no native vegetation associated with watercourses will be cleared. The proposed clearing is therefore not likely to be at variance to this principle.
Methodology	DWER and DBCA shapefiles MRWA (2020)

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Comments	**Proposed clearing is not likely to be at variance to this Principle**
	The Project area is in a low rainfall area. Average annual rainfall for the local area, Norseman, is 288 mm which on average falls throughout the year at between 20 – 30mm per month. The clearing in the Project area is 3 ha in a well vegetated area on flat to gently undulating topography, minimising any potential for soil erosion. The Project area retains approximately 98% native vegetation. Most of the rainfall in this region is either lost to evaporation or used by vegetation, providing little for groundwater recharge DoW (2007). The small area being cleared is therefore unlikely to increase the chances of waterlogging or provide a large change in recharge. Therefore the potential for changes to salinity levels is low given the groundwater is already saline. As the clearing is small areas within a larger, well-vegetated area, the possibility of wind and water erosion is low. As there will be no excavation below the water table, it is unlikely acid sulfate soils will become exposed. Given the small amount of clearing (3 ha) in well-vegetated areas and the flat topography, it is unlikely that clearing this vegetation will increase land degradation. Therefore, the native vegetation clearing is not likely to be at variance to this Principle.
Methodology	BoM (2021) DoW (2007) DPaW shapefiles

(h) 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.

Comments	**Proposed clearing is not likely to be at variance to this Principle**
	The Project area is more than 2 km from the closest conservation reserve, an unnamed Nature Reserve encompassing the large salt lake system to the south. Given the distance and the small amount of clearing (3 ha), it is highly unlikely the environmental values of the nature reserve will be impacted. Given the small areas of clearing (3 ha) over the 616 ha Project area, ecological connectivity will not be diminished from current levels so no additional fragmentation will occur to corridors servicing the nature reserve. The proposal is therefore not likely at variance to this Principle.
Methodology	DBCA shapefiles EPA (2016) MRWA (2020)

(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.

Comments	**Proposed clearing is not likely to be at variance to this Principle**
	The top third of the Project area overlies the Goldfields groundwater area but does not occur in a proclaimed surface water area or public drinking water source area. The Goldfields region is characterised by saline groundwater where recharge by rainfall is minimal due to low annual rainfall, evaporation losses and vegetation use. Surface water is seasonal after rains flowing along drainage channels into playa lakes where it evaporates leaving salt deposits (DoW 2007). The Project area lies within native vegetation that has been subject to limited clearing. The landscape is low relief plains, which, coupled with low rainfall, provide low erosion potential. Native vegetation clearing is a small area (3 ha) across the 616 ha Project area so is unlikely to change the water regime such that erosion, salinity or nutrients are mobilised into ground or surface water. Given the above, it is considered the removal of native vegetation will not significantly deteriorate surface or groundwater and therefore is not likely at variance to this principle.
Methodology	DWER and DBCA shapefiles BoM (2021) DoW (2007) MRWA (2020)

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Comments	**Proposed clearing is not likely to be at variance to this Principle**
	The Project area is in a low rainfall area. Average annual rainfall for the local area, Norseman, is 288 mm which on average falls throughout the year at between 20 – 30mm per month. Greater than 1mm of rain falls for 5 days in the winter months and 3 days the rest of the year, indicating sustained rainfall is unlikely, and therefore so is the likelihood of flooding. Due to the low rainfall and small amount of clearing (3 ha) over the 616ha Project area, it is unlikely that the incidence or intensity of flooding will increase. Large, connected areas of native vegetation remain in the surrounding area to attenuate water flow in the event of heavy rain. Therefore, it is considered unlikely that the clearing will increase the incidence or intensity of flooding. Given the above this proposal is not likely to be at variance to this Principle.
Methodology	BoM (2021) MRWA (2020)

6 ADDITIONAL ACTIONS REQUIRED

The clearing associated with the proposal is unlikely or not at variance with the Clearing Principles. Additional management actions under CPS 818 are detailed in Table 6.

Table 6. Summary of Additional Management Actions Required by Permit CPS 818

Impact of Clearing	Yes/No or NA	*Further Action Required*
1. The project involves clearing for temporary works (as defined by CPS 818).	**No**	No further action required.
2 a. Project is within Region that: - Has rainfall greater than 400mm and - Is South of the 26th parallel and - Works are in 'Other than dry conditions' and - Works have potential for **uninfested** areas to be impacted	**No**	Proceed with standard Vehicle and Plant management actions from PEMR's and Vehicle and Plant Hygiene Checklists.
3. Main Roads has been notified by DWER or an environmental specialist that the area to be cleared is susceptible to a pathogen other than dieback	**No**	No further action required.
4. The vegetation within the area to be cleared and/or the surrounding vegetation in a good or better condition and weeds likely to spread to and result in environmental harm to adjacent areas of native vegetation that are in good or better condition	**No**	No further action required.

7 VEGETATION MANAGEMENT

Main Roads will avoid clearing native vegetation where possible. Where clearing cannot be avoided then this clearing is kept to a minimum. Vegetation will be managed in accordance with the Principal Environmental Management Requirements (PEMR's).

8 REFERENCES

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9 APPENDICES

Appendix	Title
Appendix A	Environmental Site Inspection Report – Bromus Material Investigation 2021
Appendix B	DBCA Threatened Flora and Fauna Database Searches REDACTED

Appendix A: Environmental Site Inspection Report for a CDR

ENVIRONMENTAL SITE INSPECTION REPORT FOR A CLEARING DESKTOP REPORT (CDR)

Bromus Material Investigation 2021 EOS 2290

SITE INSPECTION DETAILS		
Date:	9/12/2020	
Location:	Coolgardie Esperance Hwy	
Region/ Directorate:	Goldfields Esperance region	
Purpose:	CDR	
Attendees:		Environment Officer MRWA

SITE VISIT DETAILS AND METHODOLOGY

Accessed site by existing vehicle tracks to record data and take photos of the vegetation represented within the proposed material search area.

SITE DESCRIPTION

Project area is predominantly *Eucalyptus* woodland over a dense mixed shrub understorey. Some of the project area is regenerating after fire.

- Fauna observations – various bird species observed and heard calls.
- Ecological connectivity of the project area is largely intact in the local area due to limited development and 98% of native vegetation remaining. To the south is an area of salt lakes beyond which an agricultural zone starts (Landscape, Regional and Local levels) and details of native vegetation remaining within or adjacent to the site.
- Soil characteristics – gravelly red sands.
- Landforms – low relief topography with some protrusion of granite on upper slopes.
- Hydrology – no wetlands present, one drainage line traverses the northern project area.
- Disturbance/Impacts – fire impact to northern project area and top corner of southern project area.
- Southern project area has previous material pit and access tracks. Tracks in the middle project area were cleared for access to fight fires.

RESULTS			
REMNANT VEGETATION			
Area (ha):	**616**		
Number & ID of Trees:	**DBH >30cm:** **Species:**	**DBH >50cm:** **Species:**	**DBH >1m:** **Species:**
Species:	**Trees – *Eucalytpus* sp. *oleosa*, *platycorys*, *salubris***		
	Shrubs – *Acacia* sp., *Melaleuca* sp., *Eremophila* sp., *Allocasuarina* sp.		
Vegetation Condition:	Excellent to Good (EPA 2016)		
Vegetation Structure:	Predominantly *Eucalyptus* woodland over mixed shrub understorey of *Melaleuca* sp., *Acacia* sp., *Allocasuarina* sp. Pockets of *Acacia*, *Melaleuca*, and *Allocasuarina* shrubland. Some areas were regenerating from fire approximately 4 years ago.		
Vegetation Composition:	Varies but predominantly midstorey shrubland.		
Significant flora observed/recorded:	**None**		
Fauna Habitat Values:	Dense midstorey/understorey except for northern project area where fire has created a more open vegetation structure that is currently regenerating.		
Declared weeds or Weeds of National Significance	None identified during visit.		
PLANTED VEGETATION			
None			
OTHER:			
SUMMARY			
Largely intact Eucalypt woodland in excellent to good condition with dense understorey, and some areas impacted by fire. **Actions:** • CPS 818 approval to conduct material investigation in project area. **Approvals Required:** • Clearing permit			
REFERENCES			
NatureMap DBCA databases for flora and fauna			

SITE PHOTOS	
	
Photo 1. *Eucalyptus* woodland over mixed shrub understorey of *Melaleuca* and *Acacia* species in excellent condition.	**Photo 2.** *Acacia*, *Allocasuarina*, and *Melaleuca* shrubland in excellent condition.
	
Photo 3. *Eucalyptus* woodland over mixed shrub understorey *Acacia*, *Melaleuca*, *Callitris*, and *Allocasuarina* species in excellent condition.	**Photo 4.** Top corner of this project area had recent fires. *Eucalyptus* woodland regenerating with low mixed shrub understorey in good condition.
	
Photo 5. *Eucalyptus* woodland over mixed shrub understorey of *Acacia* and *Callitris* on upper ridges. Valleys have *Acacia*, *Melaleuca*, *Allocasuarina* shrubland.	**Photo 6.** Lower in landscape supports *Acacia*, *Melaleuca* and *Allocasuarina* shrubland. Higher up *Eucalyptus* woodland with mixed shrub understorey.

SITE PHOTOS

Photo 7. *Acacia*, *Melaleuca* and *Allocasuarina* shrubland in excellent condition.

Photo 8. *Acacia*, *Melaleuca* and *Allocasuarina* shrubland in excellent condition.

Photo 9. Open *Eucalyptus* woodland over mixed shrub understorey in excellent condition.

Photo 10. *Eucalyptus* woodland over mixed shrub understorey in excellent condition, red gravelly soils.

Photo 11. *Eucalyptus* woodland over mixed shrub understorey of *Acacia* and *Scaevola* in excellent condition.

Photo 12. *Acacia* and *Allocasuarina* shrubland in excellent condition on sandy gravel.

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Photo 13. Regenerating after fire *Allocasuarina* and *Acacia* shrubland over bunch grasses in very good condition.	**Photo 14**. Regenerating after fire *Allocasuarina* and *Acacia* shrubland in very good condition.
	
Photo 15. *Allocasuarina* and *Acacia* shrubland regenerating after fire. Yellow sand in very good condition.	**Photo 16**. *Eucalyptus* woodland over mixed shrub understorey in excellent condition.
	
Photo 17. Regenerating *Eucalyptus* woodland over mixed shrub understorey of *Acacia*, *Eremophila* and *Scaevola* in very good condition.	**Photo 18**. Regenerating *Eucalyptus* woodland over mixed shrub understorey of *Acacia* and *Eremophila* in very good condition.