

**PRELIMINARY ENVIRONMENTAL IMPACT ASSESSMENT
AND
ENVIRONMENTAL MANAGEMENT PLAN**

**South Western Highway (H9)
(280 - 294.3 SLK)
Manjimup to Pemberton turnoff**

(Version 4)



Compiled by: EO/A Peter Swanson
Date: February 2010

REVISION STATUS RECORD

Revision No.	Revision Date	Description of Key Changes
3	05/02/10	Version number included Expansion of Description of Project (page 5-6)
4	18/01/11	Inclusion of reviewed dieback advice from DEC (Appendix J) and amended EMP
		Inclusion of correspondence from DSEWPC and response by the fauna consultant and Main Roads (Appendix C)

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PRELIMINARY ENVIRONMENTAL IMPACT ASSESSMENT AND ENVIRONMENTAL MANAGEMENT PLAN (MINOR PROJECTS)

SOUTH WESTERN HIGHWAY – MANJIMUP TO PEMBERTON TURNOFF

1 PROJECT DESCRIPTION

The proposed project is to widen the road approximately 0.5 metres each lane and provide sealed shoulders to approximately 14km of South Western Highway (H009) from Manjimup to Vasse Highway (M008) intersection (280 - 294.3 SLK) in the Shire of Manjimup. Subsequent improvements will be made to the clear zone as necessary. It is also proposed to upgrade the Vasse Highway Intersection with Type E intersection treatment with Type B painting.

2 BACKGROUND

The section of South Western Highway between Manjimup and Vasse Highway intersection has been identified as requiring improvement to enhance safety. Investigation has shown that widening the existing road to accommodate sealed shoulders and associated work to the clear zone will provide the best value for money treatment, while inclusion of an intersection treatment at Vasse Highway will provide complementary safety improvements.

As per Main Roads' Environmental Assessment and Approval process, the Low Impact Environmental Screening Checklist has been completed for the proposal, refer to Appendix A. As the proposed works involves new road reserve being created and clearing of native vegetation outside of the maintenance zone and the clearing of native vegetation that is older than 10 years within the maintenance zone, the preparation of a project specific Preliminary Environmental Impact Assessment (PEIA) and Environmental Management Plan (EMP) are required. This report fulfils this requirement.

3 DESCRIPTION OF THE PROJECT

The section of South Western Highway proposed to be widened commences at approximately SLK 280, just south of Manjimup town site and extends 14 km south to SLK 294.3 at the intersection with Vasse Highway to Pemberton.

The existing road cross section has a seal width of 7.2m with narrow gravel shoulders that have become rounded and steep over time. The existing batters are quite steep in some sections which are a safety issue by reducing the area of the recovery zone for errant vehicles.

It is proposed to upgrade the road cross section by

- widening the carriageway to 2 x 3.5m wide traffic lanes
- constructing 1m wide sealed shoulders
- and 1m wide unsealed shoulders as well as
- reducing roadside hazards.

Works near the Manjimup town site (SLK 280.00 – 281.20), which is of an urban nature, will be undertaken by retaining the existing centre line and widening the shoulders and flattening fill batters on both sides of the highway.

Works for the majority of the proposal (SLK 281.20 – 293.30) is proposed primarily on the western side, with reconstruction of shoulders and flattening of batters only proposed for the eastern side. The decision was made to widen on the western side in an attempt to reduce the extent of clearing of road side vegetation. The eastern verge has only a narrow strip of vegetation in many sections that would be entirely lost or would become increasingly unsustainable if further reduced.

The minimum clear zone considered acceptable with the current vehicle speed is four meters from the road edge line. Further assessment of the vegetation will be required in some areas where the batters need to be flattened and consideration given to the options of either clearing vegetation, leaving batter as it is or installing safety barrier/wire ropes.

The upgrade at the Vasse Highway intersection (SLK 293.30 – 294.34) will require widening on both sides of highway.

3.1 Project Location

The location of the study area is shown below:

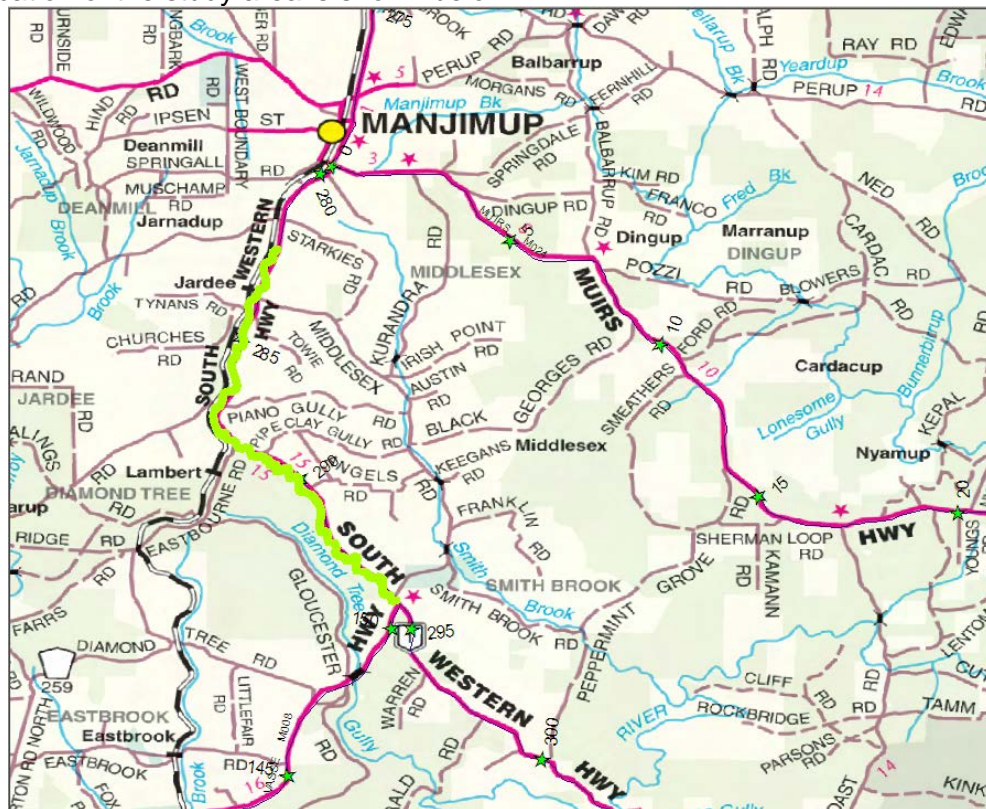


Figure 1: Site location

4 METHODOLOGY

4.1 Preliminary Desktop Study

A preliminary assessment of the project area and its potential constraints was undertaken by reviewing a number of government agency managed databases and consulting with the relevant government organisations where necessary.

4.1.1 Wetlands

The locations of wetlands within the project area was determined using the Commonwealth Department of Environment, Water, Heritage and the Arts (DEWHA) mapping tool (<http://www.environment.gov.au/apps/boobook/mapservlet?app=pmstand>) and Department of Water Geographic Data Atlas mapping tool. (<http://www.water.wa.gov.au/idelve/dowdataext/index.jsp>) (Appendix B)

4.1.2 Threatened Flora, Fauna and Communities, Conservation Reserves and ESAs

The location of Threatened Flora, Fauna and Communities, Conservation Reserves and ESAs was determined using the Department of Environment and Conservation (DEC) Native Vegetation Map Viewer. <http://maps.dec.wa.gov.au/idelve/nv/index.jsp> DEC was also contacted directly to confirm any known populations of threatened flora, fauna and Threatened Ecological Communities (TECs) and conservation reserves (Appendix C).

4.1.3 Vegetation Type, Extent and Status

Vegetation types and associations were determined by examining the SLIP NRM database. Vegetation extent and status data was sourced from the Main Roads file "*Native Vegetation in Western Australia - Extent, Type and Status*" ([car_reserve_analysis_2006.xls](#)) located on the Main Roads Environment Intranet site (Appendix E).

4.1.4 Air Quality

The need for a local air quality assessment was determined using the criteria outlined in the MRWA environmental guideline, Air Quality Assessment.

4.1.5 Heritage

Non-indigenous heritage was examined utilising the Australian Heritage Places Inventory (<http://www.heritage.gov.au>), Heritage Council of Western Australia database (<http://register.heritage.wa.gov.au/>) and the Shire of Manjimup Municipal Heritage Inventory (Appendix F).

4.1.6 Aboriginal Heritage

A Search of the Department of Indigenous Affairs' (DIA's) (<http://www.dia.wa.gov.au/AHIS/Default.aspx>) database was undertaken to determine whether the project area contains any sites of Aboriginal heritage (Appendix G).

4.1.7 Sensitive Water Resources

The Department of Water's Geographic Atlas was consulted on sensitive water resources (including Public Drinking Water Source Areas) to determine whether the project area supported, or was adjacent to, any significant lakes, rivers or wetlands or proclaimed areas (Appendix B). (<http://www.water.wa.gov.au/idelve/dowdataext/index.jsp>)

4.1.8 Contaminated Sites

The need for a contaminated site assessment was determined using the criteria outlined in the MRWA environmental guideline, Contaminated Sites and discussion with Main Roads' Land and Property personnel.

4.1.9 Acid Sulfate Soils

The WA Atlas of Landgate was reviewed (<https://www2.landgate.wa.gov.au/mapviewer/bmvf/app/waatlas/>) to determine what level of acid sulfate soils risk the project area is exposed to (Appendix D).

4.1.10 Weeds

An onsite visit was undertaken to determine whether there are any known populations of declared plants or significant weeds in or adjacent to the project area and the Department of Agriculture and Food was contacted. The results of a recent survey for Declared Plants are included in Appendix I.

4.1.11 Dieback

Advice was obtained from the Department of Environment and Conservation District Nature Conservation Coordinator (Appendix J).

4.2 Commonwealth and State Referral

The decision to refer the project to the State's Environmental Protection Authority (EPA) is based on whether significant environmental impact, amendment to TPS or the project is of significant size and/or public interest. The decision to refer the project to the Commonwealth's Department of Environment, Water, Heritage and the Arts (DEWHA) is based upon whether the project would significantly impact upon matters of national environmental significance, e.g. World Heritage properties, protected wetlands and migratory species, Commonwealth marine areas, threatened species or communities or nuclear actions.

4.3 Site Investigation

A site visit was carried out by Project Manager Srikanthi Jayasekera and Environment Officer Peter Swanson on 8th January 2009 to examine the general features of the area. The broad vegetation types in the vicinity of the project area were identified. Other issues that were considered included topography, the impacts on creek lines, property access and the potential for noise and vibration impacts (dilapidation).

Site photos were taken and are included in Appendix L.

5 EXISTING ENVIRONMENT

5.1 Description

This section of SW Hwy passes through a range of adjacent land uses, including National forests, pasture lands and some residences. The types of vegetation within this section varies considerably from stretches of shrubs to quite significant individual trees and only grass in some of the works locations. The condition of the vegetation ranges from Completely Degraded to Very Good (Keighery 1994). In some locations there are large trees on both sides of the highway that are proposed to be removed to improve lateral clearances and provide a safer driving environment.

The extent of clearing that will be required is difficult to accurately define due to the length of the project, the extent of the vegetation cover in different sections and the fact that only individual trees are proposed to be removed in some sections. An estimate of clearing has been made based on an average clearing width of three meters and an overall vegetation cover of 70%. Therefore over the 14 kilometers there may be up to 3 hectares of native vegetation cleared.

The final design for the proposed works has not yet been confirmed and will be dependent upon environmental and safety considerations. The minimum acceptable clearance appropriate for the current speed limit is four meters. The means of addressing individual

significant trees inside of this distance will be determined through ongoing consultation with relevant stakeholders.

There are three primary vegetation associations along this section of the highway, each with a quite high representation as compared to pre-European extents, as follows:

- *Vegetation Association no. 3: Medium forest; jarrah-marri - 70%*
- *Vegetation Association No. 1144: Tall forest; karri & marri (Corymbia calophylla) - 79.3%*
- *Vegetation Association no. 1112: Mosaic: Tall forest; karri / Tall forest; jarrah & marri - 93.6%*

5.2 Site Investigation

Site Investigation	Description/Comment
Total area (ha) of <u>native vegetation</u> to be cleared	The area to be cleared is difficult to accurately define due to the length of the project, the range of vegetation cover in different sections and the fact that only individual trees are being removed in some sections. An estimate of clearing has been made based on an average clearing width of three meters and an overall vegetation cover of 70%. Therefore over the 14 kilometers there may be up to 3 hectares of native vegetation cleared.
Total area (ha) of other vegetation, including regrowth, landscape areas, to be cleared	Similarly it is not yet possible to define the extent of other vegetation to be cleared.
Weeds present	Declared weeds have been identified by Department of Agriculture and Food (Appendix I).
Drainage areas or wetlands present	NO
Adjacent land uses	Various - National forests, pasture land and some residences.

6 CLEARING OF NATIVE VEGETATION

Native vegetation describes all indigenous aquatic and terrestrial vegetation (living or dead). The term does not include vegetation that was intentionally sown, planted or propagated unless it was required under a statutory condition.

Apart from activities that are exempt under the clearing regulations, such as clearing vegetation that is less than 10 years old for maintenance, typically all Main Roads clearing will be undertaken using its State wide Project Purpose Permit.

6.1 Assessment against Clearing Principles

In assessing whether the project is likely to have a significant impact on the environment, the project has been assessed against the DEC's 10 principles of clearing, refer to Appendix K.

From the assessment; **the project is not likely to be at variance with the DEC's 10 clearing principles.**

7 ASSESSMENT OF ASPECTS AND IMPACTS

Table 1: Aspects and Impacts – **South Western Highway (H9)– Manjimup to Pemberton turnoff (280 - 294.3 SLK)**

Aspect	Evaluation of Potential Impacts
Air quality	Air quality is not likely to be affected by the proposed works. Local air quality assessment is not required for the project since: <ul style="list-style-type: none"> residential and other sensitive receptors are not within 200 meters of the road centre
Dust	Likely to be a minor issue during earthworks.
Fauna	No significant fauna issues associated with the proposed upgrade works were identified. No fauna protected under EPBC Act (1999) are expected to be impacted.
Vegetation – clearing	<ul style="list-style-type: none"> < 3ha of native vegetation is expected to be cleared. The native vegetation to be cleared is growing along the edge of the highway and has been generally impacted by disturbances such as clearing for pasture land, wind and fires. The condition of native vegetation to be cleared ranges from Degraded through Good to Very Good (Keighery 1994) The three vegetation associations present are all well represented regionally (i.e. it possesses more than 30% of its pre-European extent). The native vegetation to be cleared does not occur within an ESA. The native vegetation to be cleared will be done so using the purpose permit as the Assessment against the Clearing Principles indicates that it is not likely to be at variance to any of the principles.
Vegetation – TECs/DRF	No significant vegetation types or threatened flora have been recorded within the road reserve. Areas outside the project area will not be disturbed as part of the proposed works. Consultation with DEC indicated that there are no TECs or DRF in the vicinity of the proposal. No TEC or DRF as protected under EPBC Act (1999) are expected to be impacted.
Vegetation – weeds	A number of environmental weeds occur along this section of roadway. Declared plants have been identified in the project area by the Department of Agriculture and Food (Appendix I).
Vegetation – dieback	No surveys have been undertaken along this section of road way, which is classified as un-protectable. Material imported onto the site will be certified dieback free.
Reserves / Conservation areas	Some sections of the project area are adjacent to the Sir James Mitchell National Park, however the limited clearing proposed will be within the road reserve and not have a deleterious effect to these areas and where possible, clearing will occur on the opposite side of the road. Adherence to Main Roads' Best Practice Guideline – 'Phytophthora Dieback' will concurrently reduce the possibility of pathogen and weed seed dispersal.
Heritage (non-indigenous)	There are no heritage significance listed sites present in the currently proposed works areas.
Aboriginal heritage	A search of DIA database identified no known sites of Aboriginal heritage significance within the vicinity of the project area.
Surface water/drainage	The proposed works are within the Warren River Water Reserve which is a non-assigned Protection Area. The scope of the works is considered minor and will not impact on the surface water and drainage.
Wetlands	The works are of a limited nature and will not impact any wetlands nearby.
Groundwater	No dewatering nor drainage modifications are required, hence no change to groundwater level or quality.
Noise and vibration	There are no major sensitive local receivers nearby.
Visual amenity	The proposed works will result in minor and short-term visual impacts during construction. Suitable site completion treatments, including landscape planting, could result in an improvement in local visual amenity.
Public safety and risk	Provided traffic management and signage to Main Roads standards is employed, none of the proposed works present any significant hazards to public safety. The proposed works will serve to enhance public safety by improving local road conditions.
Hazardous substances	Not relevant to the proposed works.
Contamination	The reserve has been in Main Roads continual control; therefore no further work will be required to identify contaminated sites. Given the relatively superficial nature of the required earthworks, there appears to be a low risk of any significant contamination issues.
Salinity	Given the nature and scale of the project the impact is not relevant.
Acid Sulfate Soils	No further investigations are necessary as the proposal is in a low risk area and there is no dewatering or excavation below the water table planned.

Table 1: Aspects and Impacts – **South Western Highway (H9)– Manjimup to Pemberton turnoff (280 - 294.3 SLK)**

Aspect	Evaluation of Potential Impacts
Statutory Land Use Planning	A small portion of a neighbouring property will need to be acquired to comply with lateral clearance requirements. As the proposed works are likely to take place outside the existing road reserve, prior to construction, development approval from the Western Australian Planning Commission should be sought. No tenure vested in the Conservation Commission of Western Australia and/or managed by DEC will be impacted by this project.

8 DECISION TO REFER

The results of this PEIA investigation and analysis of the database search of the Commonwealth Department of Environment, Water, Heritage and the Arts (DEWHA) mapping tool (Appendix B) indicate that no Matters of National Environmental Significance will be significantly impacted. Therefore referral to DEWHA is not warranted.

Given the scale of the project, the low significance of its impacts to the surrounding environment and the environmental management measures proposed, the project also does not require referral to the WA Environmental Protection Authority.

9 STAKEHOLDER CONSULTATION

Name	Agency	Date	Comments
Amy Mutton	DEC <i>Species and Communities Branch</i>	08/01/09	No Threatened fauna
Bridgitte Long	DEC <i>Species and Communities Branch</i>	23/12/08	No Threatened flora in the vicinity
Mia Podesta	DEC <i>Threatened Ecological Community Database</i>	23/12/08	No TECs in the vicinity
Kaylene Roberts	Customer Liaison Officer Shire of Manjimup	23/01/09	No European heritage sites in the vicinity
John Gillard	Manager DEC Donnelly	15/04/09	Advised by phone that a survey is not necessary to undertake as public access prevents dieback isolation. Recommends imported materials are certified as dieback free.
Ian Wilson	District Nature Conservation Coordinator	16/04/ 09	No dieback survey available for project area
Peter Keppel	Regional Manager DEC Manjimup	05/01/11	Advice regarding dieback and materials
Peter Gardiner	Research Officer Dept. Agriculture & Food	21/04/09	Provided location of Declared plants

10 ENVIRONMENTAL MANAGEMENT PLAN

This section of the report (the EMP) has been developed for the project area following the completion of the above sections. The main aim of this EMP is to provide a management plan to assist in minimising the environmental impacts of the activities associated with the proposed works and identify who is responsible for the implementation of the management strategies.

This EMP will only address the actions already listed as well as any site-specific issues that were identified during the PEIA. The project specific management measures identified within this EMP are in addition to the standard specifications used for Category 2 projects. The environmental management measures/conditions in Main Road's Specifications 203, 204, 301 and 302 are still to be followed where applicable.

The areas that require special management will be addressed in terms of:

- the timing of the various management actions;
- the topic (e.g. vegetation);
- the objectives for each area;
- the actions that are necessary to minimise the impact;
- the responsible party for implementing the action; and
- whether the action arose from external advice or is a Main Roads requirement.

10.1 Communication Plan

Environmental issues specific to the project will be communicated as follows:

Method	Frequency	Participants	Reference	Record
Project Site				
<i>Induction</i>	<i>Prior to Work</i>	<i>All personnel and subcontractors</i>	<i>EMP and Contractor Environmental Policy</i>	<i>Induction Meeting</i>
<i>Toolbox Meetings</i>	<i>Weekly</i>	<i>Project Personnel</i>	<i>Contractor Safety Plan</i>	<i>Minutes of Meeting</i>
<i>Contract Meetings</i>	<i>fortnightly</i>	<i>Main Roads' Project Manager and Contractor Project Manager</i>	<i>EMP</i>	<i>Minutes of Meeting</i>

10.1.1 External Communication and Complaints

A complaints register shall be maintained by the contractor. All complaints received shall be forwarded to the Main Roads' Project Manager for action. Serious complaints shall be investigated within 24 hours of the complaint being received.

ENVIRONMENTAL MANAGEMENT PLAN					
Timing	Topic	Objective	Action	Responsible Party	Advice
All phases of the Project	Environmental Management	Inclusion of environmental management measures	Environmental management measures detailed in this EMP will be included in the technical specifications, contractual documents and site induction materials prepared for the project for all site personnel and service providers.	Project Manager	Main Roads
		Operational Management	Nominate a person responsible for monitoring and reviewing all operations in order to minimise any nuisance to the public.	Contractor	Main Roads
	Vegetation Clearing - Record-keeping	All projects should maintain the required records relating to clearing native vegetation under the purpose permit.	a copy of the PEIA & EMP	Project Manager	DEC
			a map showing the location where the clearing occurred, recorded as a shape file or coordinates of individual specimens		
the size of the actual area cleared (in hectares)					
the dates on which the clearing was done					
Pre-Construction	Vegetation	Ensure that the overall objectives of the alignment and construction works are compatible with maintaining and, where possible, enhancing the biological integrity of the surrounding environment and minimising vegetation loss and degradation; and Ensure the retention of as many habitat trees, shrubs and vegetated corridors for fauna as possible, particularly where associated with riparian zones.	Selection of designs/locations that minimise adverse impacts on the biological environment.	Project Manager	Main Roads
			Selection of individual tree specimens that might be retained and protected with barriers or similar alternative treatments.		
			Construction works to be undertaken in summer to reduce the potential for soil erosion and drainage line siltation due to vegetation removal and heavy rains.		
			Control/spray known weed species within the project area <u>prior to construction disturbance</u> to limit the amount of propagative material that may be spread during disturbance. Refer to Roadside Conservation Committee, WA, 2005: <i>Handbook of Environmental Practice for Road Construction and Maintenance Works</i>		
			The clearing line (or individual specimens) will be clearly marked and checked prior to clearing.	Project Manager / Contractor	
			Forest Products Commission will be invited to arrange for any salvageable timber to be removed from the site.		
			Any stockpiled vegetation from clearing works shall not be burnt. This vegetation shall be chipped and used for future rehabilitation.		
	Public Relations		Inform Main Roads, local shire and local land-holders of the nature and timing of works and provide contact details for complaints.	Contractor	Main Roads

Construction	Noise, Vibration and Dust and Public Access	Ensure that the construction of the proposal does not become a nuisance to the public.	Access to private property and appropriate traffic management measures should be planned and implemented prior to the construction works.	Contractor / Project Manager	Main Roads
			Works associated with the construction should not prevent public access along adjacent land. Public access should be maintained along the reserve at all times.	Contractor	Main Roads
			Any damage due to vibration, dust or noise are the responsibility of the contractor to rectify.		
			Where it is found that trucks leaving the site are carrying excessive material onto sealed surfaces, these areas will be swept to reduce dust generation and maintain traffic safety.		
			Watering, the use of hydromulch or other forms of mulching to protect loose surfaces shall be used as mitigation measures as necessary.		
	Vegetation	Avoid damage to adjacent vegetation	Trees to be removed are to be felled in a manner that they fall within the approved clearing line.	Contractor	Main Roads
			Vehicles and equipment will not be parked or drive over tree roots or undisturbed vegetation.		
		Recycle timber and avoid fire risk	Any stockpiled vegetation from clearing works shall not be burnt. This vegetation shall be either chipped and used during rehabilitation works or removed from site.		
	Weeds & Pathogens (Dieback)	Minimise the risk of introducing weeds or pathogens to the site	Standard weed and hygiene measures should be applied for all earthworks in the area, including ensuring that plant and equipment brought on to (and leaving) the site are clean of potentially contaminated soil.	Contractor	Main Roads
			All imported material must be certified as being weed and pathogen free. Amended – see Appendix J.		
			Topsoil will be stored and respread within the same section to minimise the potential introduction/spread of weeds or pathogens		
	Pollution and Litter	Ensure that the construction of the proposal is managed to a standard that minimises any adverse impacts on the environment.	The designated servicing area will be bunded to contain any spills or leaks and shall not be located in an area adjacent to any drainage areas or watercourses or will drain into a temporary sump.	Contractor	Main Roads
			Emergency cleanup procedures shall be implemented in the case of any spillage. These will include control of spilled material and removal of contaminated soil to an approved site. The contractor shall ensure appropriate equipment is available at all times and shall notify the Superintendent's Representative of a spill.		

			All waste oil will be collected for recycling and any empty fuel/oil containers, used filters and waste hydraulic parts to be collected and stored in an allocated area then removed to an approved site.		
			Dumping or temporary storage of bitumen, asphalt, concrete or aggregate should only occur at designated depots or controlled hardstands.		
			The project areas, including hardstand areas, will be kept in a tidy manner at all times.		
	Fuel & Chemical Storage	Avoid chemical storage and spill impacts	No storage of fuels or hazardous chemicals on site. Maintain materials for the clean-up of spills.	Contractor	Main Roads
	Fire	Ensure that the fire risk associated with the construction of the proposal is minimised.	No fires shall be lit within the project area. Machinery will be fitted with approved spark arresting mufflers. A water tanker will be on site at all times.	Contractor	Main Roads
	Aboriginal Heritage	Appropriately manage any Aboriginal heritage material identified during works.	Works should immediately cease within 20m of uncovered material of interest.	Contractor	Main Roads DIA
	Site Management	Ensure that the site is managed to ensure that construction of the proposal will have minimal impact upon the surrounding environment.	Site office and materials storage areas will be located on previously disturbed/ designated area.	Contractor	Main Roads
Post-Construction	Reinstatement of project site	Leave the project area free from debris.	All waste materials from the development are to be completely removed from the site upon completion of the development.	Contractor	Main Roads
			Final clean-up shall be to the satisfaction of the Project Manager and the Site Superintendent.		

11 MONITORING, CONTINGENCY MEASURES & AUDITING

Given the scale and nature of the project, limited extent of clearing and that there is no revegetation to be undertaken; there is no requirement for post-construction monitoring, contingency measures or auditing.

Appendix A

Low Impact Environmental Screening Checklist

Checklist - Low Impact Screening Checklist

The Low Impact Screening Checklist is part of the environmental assessment and approval process, refer to in Figure 2 in the Main Roads environmental guideline Environment Assessment and Approvals. It should be noted that the checklist does not address Aboriginal heritage issues. Please refer to Main Roads guideline *Aboriginal Heritage* for the heritage assessment process.

All projects are to be screened to identify those that are Low Impact.

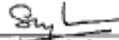
Projects that have "No" to all items are classed as Low Impact and should be implemented using standard contract clauses in the Tender Document Process.

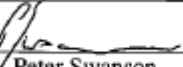
Projects that have "Yes" to any item will require further environmental assessment and will be implemented using an Environmental Management Plan.

Tick "Yes" or "No" for every item.

Project Name^{H09} South West Highway between Manjimup and the Vasse Highway intersection (SLK 280-294.3) – road widening and shoulder resealing

ITEM NO.	ITEM	Y	N
1	New road or road reserve to be created or expansion of existing road reserve.	X	
2	Works require clearing of native vegetation outside the maintenance zone.	X	
3	Works require clearing of native vegetation that is older than 10 years old within the maintenance zone.	X	
4	Works to occur outside normal working hours.		X
5	Passes over, adjoins or drains directly into a wetland or sensitive watercourse.		X
6	Local natural drainage regime / hydrology will be changed.		X
7	Dewatering, or a new water bore required.		X
8	Known potential source of hazardous materials within or adjoining project area. e.g. Acid Sulphate Soils, existing petrol station, industrial site or waste disposal site (landfill)		X
9	Buildings will require demolition.		X

Completed By: *Signature*  *Date* 12/01/09
Name Srikanthi Jayasekera *Title* PM

To be reviewed by a Main Roads Environment Officer: *Signature*  *Date* 12/01/09
Name Peter Swanson *Title* A/EO

Comments: _____

Checking boxes on Items 1, 2 & 3 require that a PEIA be undertaken.

Appendix B

**Commonwealth Department of Environment, Water,
Heritage and the Arts (DEWHA) mapping tool**

**Department of Water's Geographic Data Atlas mapping
tool**

Australian Government
Department of the Environment, Water, Heritage and the Arts

Environmental Reporting Tool

Two steps to an environmental report
1. Zoom to an area of interest using the

Map Search

Layers

- Pollutant Inventory
- Roads
- Property Boundaries
- Protected Areas
- World Heritage
- Cwth Heritage
- National Heritage
- Register of the National Estate
- Ramsar Wetlands
- Important Wetlands
- Forest Agreements
- Rivers and Lakes
- Towns
- Land Background
- World Countries
- Cwth Marine Area



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Environmental Reporting Tool

You are here: [Environment Home](#) > [ERIN](#) > [ERT](#)

Database Report

18 December 2008 16:03

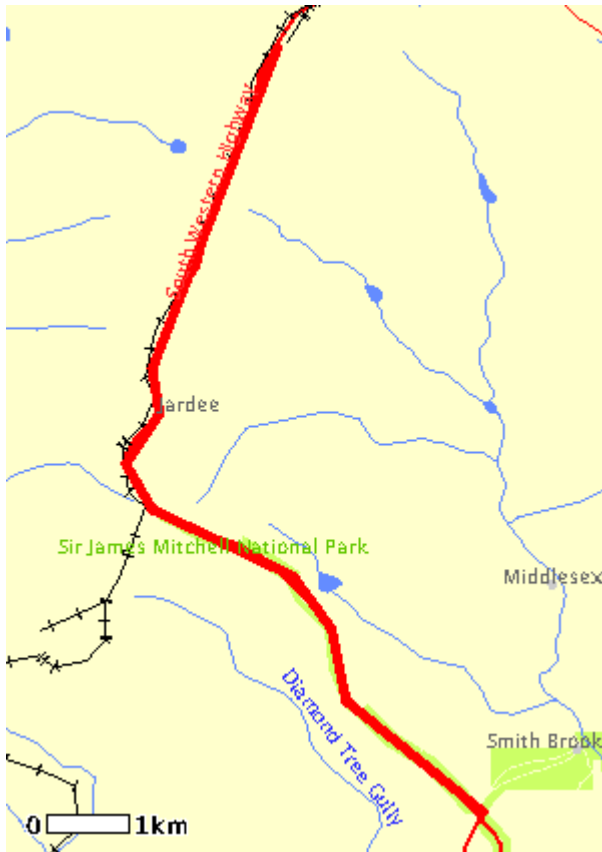
This report includes places of national environmental significance that are registered in the Department of the Environment and Water Resources' databases, for the selected area. The information presented here has been provided by a range of groups across Australia, and the accuracy and resolution varies.

Search Type: Line

Buffer: 0 km

Coordinates: -34.25698,116.13483, -34.29935,116.11832, -34.30527,116.11925, -34.31181,116.11489, -34.31773,116.11832, -34.32645,116.13669, -34.33330,116.14168, -34.34265,116.14355, -34.35760,116.16193





This map may contain data which are
 © Commonwealth of Australia (Geoscience Australia)
 © 2007 MapData Sciences Pty Ltd, PSMA

Biodiversity

Threatened Species: 5

Migratory Species: 7

Listed Marine Species: 5

Invasive Species: 12

Whales and Other Cetaceans: None

Threatened Ecological Communities: None

Heritage

World Heritage Properties: None

Australian Heritage Sites: None

Wetlands

**Ramsar sites:
 (Internationally important)** None

Nationally Important Wetlands: None

National Pollutant Inventory

Reporting Facilities: None

Airsheds: 1

Catchments: None

Protected Areas

Reserves and Conservation Areas: 1

Regional Forest Agreements: 1

Biodiversity		
Threatened Species [Dataset Information]	Status	Comments
Birds		
Calyptorhynchus baudinii Baudin's Black-Cockatoo, Long-billed Black-Cockatoo	Vulnerable	Species or species habitat likely to occur within area
Calyptorhynchus latirostris Carnaby's Black-Cockatoo, Short-billed Black-Cockatoo	Endangered	Species or species habitat likely to occur within area
Mammals		
Dasyurus geoffroyi Chuditch, Western Quoll	Vulnerable	Species or species habitat likely to occur within area
Pseudocheirus occidentalis Western Ringtail Possum	Vulnerable	Species or species habitat likely to occur within area
Setonix brachyurus Quokka	Vulnerable	Species or species habitat may occur within area
Migratory Species [Dataset Information]	Status	Comments
Migratory Terrestrial Species		
Birds		
Haliaeetus leucogaster White-bellied Sea-Eagle	Migratory	Species or species habitat likely to occur within area
Merops ornatus Rainbow Bee-eater	Migratory	Species or species habitat may occur within area
Migratory Wetland Species		
Birds		
Ardea alba Great Egret, White Egret	Migratory	Species or species habitat may occur within area
Ardea ibis Cattle Egret	Migratory	Species or species habitat may occur within area
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift	Migratory	Species or species habitat may occur within area
Ardea alba Great Egret, White Egret	Migratory	Species or species habitat may occur within area
Ardea ibis Cattle Egret	Migratory	Species or species habitat may occur within area
Listed Marine Species [Dataset Information]	Status	Comments
Birds		
Apus pacificus Fork-tailed Swift	Listed - overfly marine area	Species or species habitat may occur within area
Ardea alba Great Egret, White Egret	Listed - overfly marine area	Species or species habitat may occur within area
Ardea ibis Cattle Egret	Listed - overfly marine area	Species or species habitat may occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle	Listed	Species or species habitat likely to occur within area
Merops ornatus Rainbow Bee-eater	Listed - overfly marine area	Species or species habitat may occur within area
Invasive Species [Dataset Information]	Status	Comments
Mammals		
Capra hircus Goat	Feral	Species or species habitat may occur within area
Felis catus Cat, House Cat, Domestic Cat	Feral	Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit	Feral	Species or species habitat likely to occur within area

<u>Sus scrofa</u> Pig	Feral	Species or species habitat may occur within area
<u>Vulpes vulpes</u> Red Fox, Fox	Feral	Species or species habitat likely to occur within area
Plants		
<u>Asparagus asparagoides</u> Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus	WoNS	Species or species habitat may occur within area
<u>Cenchrus ciliaris</u> Buffel-grass, Black Buffel-grass	Invasive	Species or species habitat may occur within area
<u>Genista sp. X Genista monspessulana</u> Broom	Invasive	Species or species habitat may occur within area
<u>Lycium ferocissimum</u> African Boxthorn, Boxthorn	Invasive	Species or species habitat may occur within area
<u>Pinus radiata</u> Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine	Invasive	Species or species habitat may occur within area
<u>Rubus fruticosus agg.</u> Blackberry, European Blackberry	WoNS	Species or species habitat likely to occur within area
<u>Ulex europaeus</u> Gorse, Furze	WoNS	Species or species habitat may occur within area

Other
Reserves and Conservation Areas [[Dataset Information](#)]

Sir James Mitchell National Park, WA

[Department of the Environment, Water, Heritage and the Arts](#)
GPO Box 787 Canberra ACT 2601 Australia
Telephone: (02) 6274 1111

Department of Environment and Conservation
Our environment, our future

Geographic Data Atlas

Welcome Search Download Metadata Map Help

Geographic Extent

Clearing Regulations - Schedule One Areas

Visibility Scale
1:50,000 - 1:5,000,000

Summary
Areas requiring a permit for clearing resulting from low impact mineral or petroleum activities as declared in Regulation 6 in Government Gazette No. 115 Environmental Protection (Clearing of Native Vegetation) Regulations 2004 - Schedule 1.

Click here for full Metadata.

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Department of Water's Geographic Data Atlas mapping tool

Appendix C

DEC Native Vegetation Map Viewer

DEC Threatened Flora, Threatened Ecological Communities (TECs) and Conservation Reserves data base search and correspondence

Conservation Commission Draft Forest Management Plan

DEC Threatened Fauna data base search

Correspondence with DEC to provide Threatened Flora information

Hi Peter

Please find attached the results from the Threatened Flora Database (DEFL) and the WA Herbarium database (WAHerb) for the two areas of interest.

Please refer to the attached letter for the Conditions of Supply for this information.

The request for information reference numbers for these searches are: 4-0109 (Manjimup) and 5-0109 (Bridgetown) (refer to Condition #8 for more information).

Regards

Bridgitte Long

Threatened Flora Database Officer
Species and Communities Branch
Department of Environment and Conservation
Ph (08) 9334 0123 Fax (08) 9334 0278
bridgitte.long@dec.wa.gov.au

From: SWANSON Peter (EO/A) [mailto:Peter.SWANSON@mainroads.wa.gov.au]
Sent: Tuesday, 23 December 2008 3:46 PM
To: Long, Bridgitte
Subject: Threatened flora search request @ Manjimup

Good morning Bridgitte

Main Roads is proposing to undertake improvements primarily involving road / shoulder widening on the South Western Highway from just south of Manjimup at the Muirs Highway intersection to the Vasse Highway turn off.
As part of the environmental assessment of the project I need to undertake a search for threatened flora, Threatened Ecological Communities (TECs) and conservation reserves in that locality.

The coordinates of the triangular area to be investigated are:

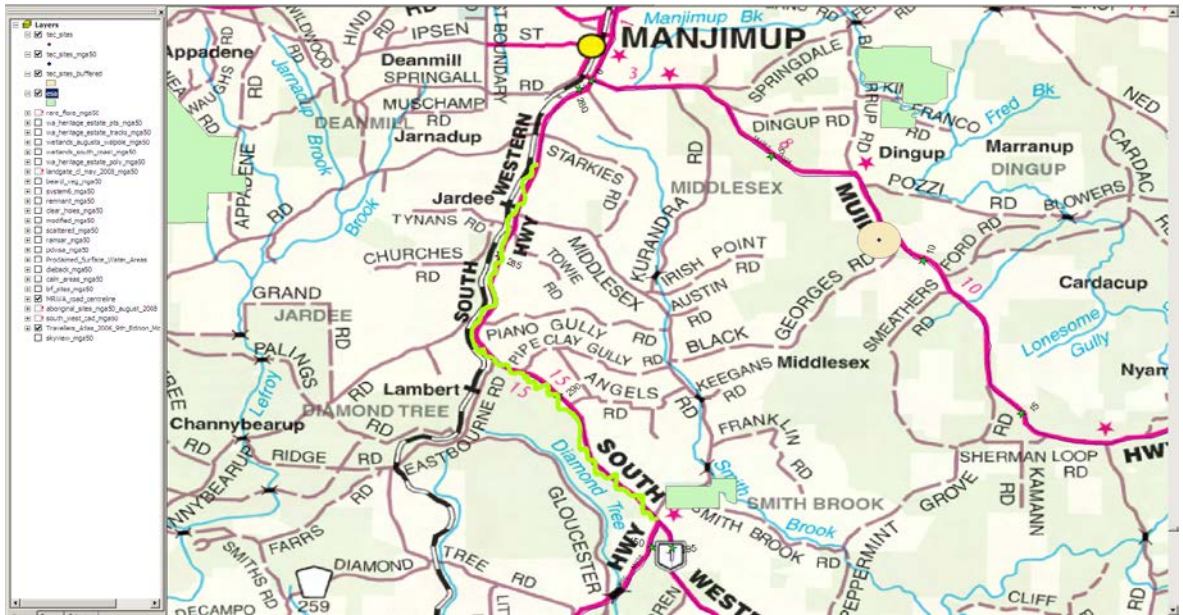
LAT	LONG
-34 ⁰ 21' 40"	116 ⁰ 9' 50"
-34 ⁰ 18' 40"	116 ⁰ 6' 24"
-34 ⁰ 14' 35"	116 ⁰ 8' 20"

Could you please provide any information of sites that may be in the vicinity?

Thanks very much

Peter Swanson
Environment Officer/A
South West Region
Main Roads Western Australia
www.mainroads.wa.gov.au

phone: 08 9725 5661 | fax: 08 9725 5666
M: 0418 931 078



Main Roads' GIS search results for Threatened Ecological Communities (TECs) and Conservation Reserves

Correspondence with DEC to provide Threatened Ecological Communities information

Mon 29/12/2008 8:41 AM

Hi Peter,

I refer to your request on the 23rd of December 2008 for information on threatened and priority ecological communities occurring within the search area co-ordinates provided.

A search was undertaken on the Department's Threatened Ecological Communities database. **Please note that there are no known occurrences of threatened ecological communities recorded within this boundary.**

However, there is an occurrence of the following ecological community within approximately 10km of your search area:

- The 'Priority 3' ecological community – 'Cryptogams associated with *Trymalium floribundum* and *Chorilaena quercifolia* in the karri forests of s-w WA'

Please note not all priority ecological communities are currently recorded on our database. You may like to view the current list in related documents at <http://www.dec.wa.gov.au/management-and-protection/threatened-species/wa-s-threatened-ecological-communities.html>.

Attached are the conditions under which this information has been supplied. The information supplied should be regarded as an indication only of the threatened and priority ecological communities that may be present.

It would be appreciated if any occurrences of threatened and priority ecological communities encountered by you in the area could be reported to this Department to ensure their ongoing management.

Mia Podesta

Ecologist - Threatened Ecological Community Database
 Department of Environment and Conservation, Kensington
 Ph: 9334 0116
 Fax: 9334 0300
 Email: Mia.Podesta@dec.wa.gov.au

From: SWANSON Peter (EO/A) [mailto:Peter.SWANSON@mainroads.wa.gov.au]
Sent: Tuesday, 23 December 2008 2:36 PM
To: Podesta, Mia
Subject: TEC search request @ Manjimup

Good morning Mia

Main Roads is proposing to undertake improvements primarily involving road / shoulder widening on the South Western Highway from just south of Manjimup at the Muirs Highway intersection to the Vasse Highway turn off.

As part of the environmental assessment of the project I need to undertake a search of threatened flora, Threatened Ecological Communities (TECs) and conservation reserves in that locality.

The coordinates of the triangular area to be investigated are:

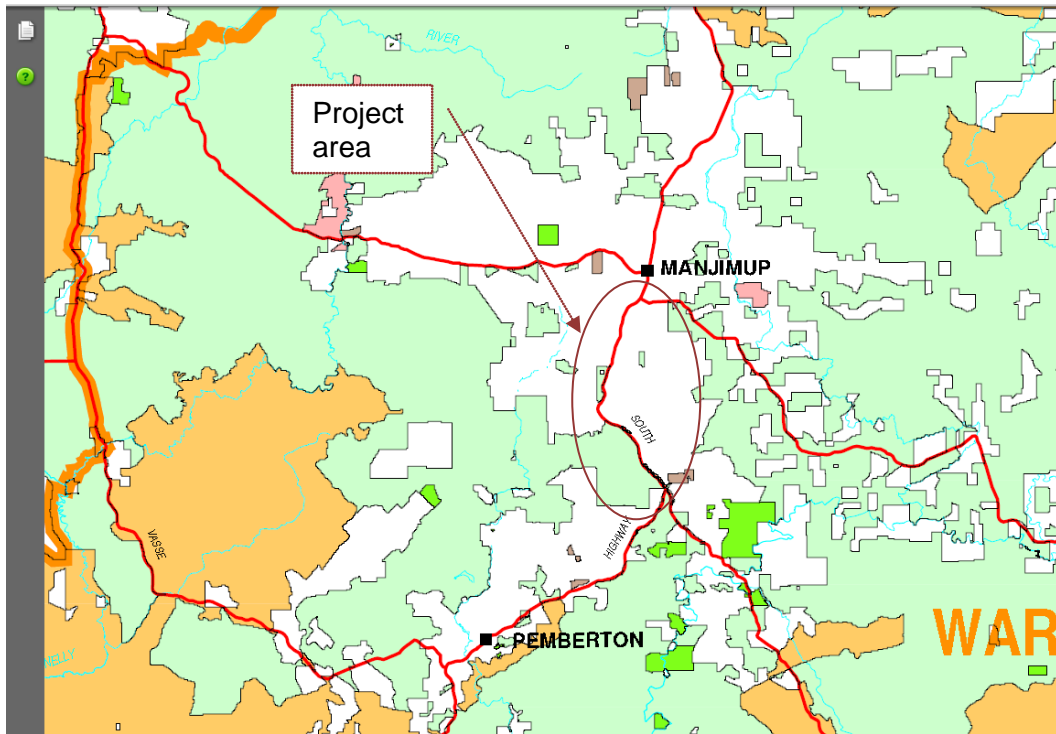
LAT	LONG
-34 ⁰ 21' 40"	116 ⁰ 9' 50"
-34 ⁰ 18' 40"	116 ⁰ 6' 24"
-34 ⁰ 14' 35"	116 ⁰ 8' 20"

Could you please provide any information of sites that may be in the vicinity?




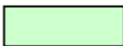


Thanks very much

Peter Swanson
Environment Officer/A
South West Region
Main Roads Western Australia
www.mainroads.wa.gov.au

phone: 08 9725 5661 | fax: 08 9725 5666
M: 0418 931 078

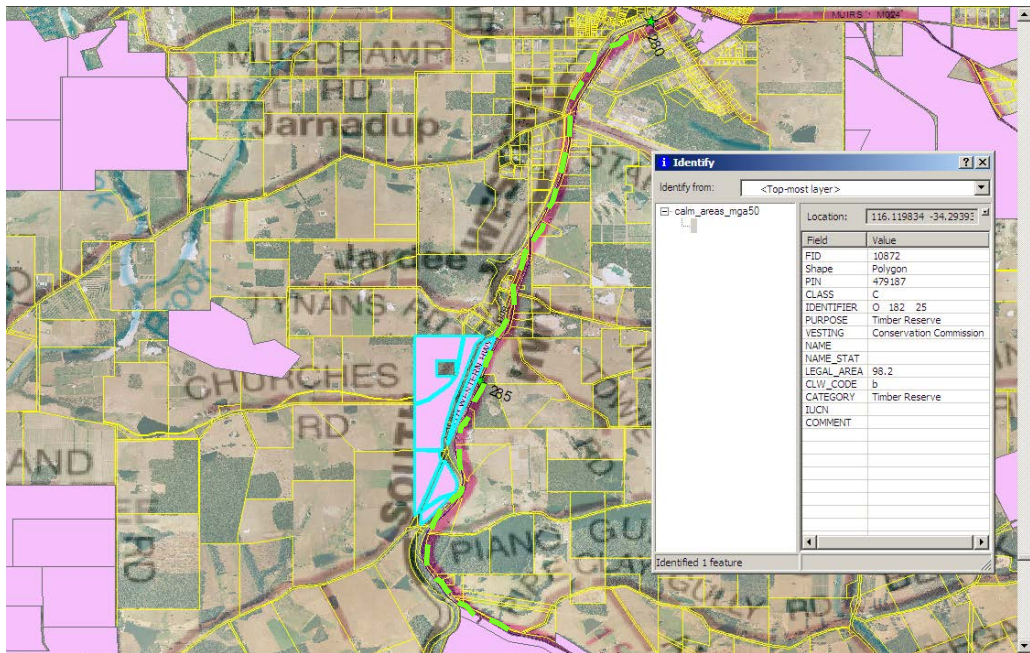


Legend

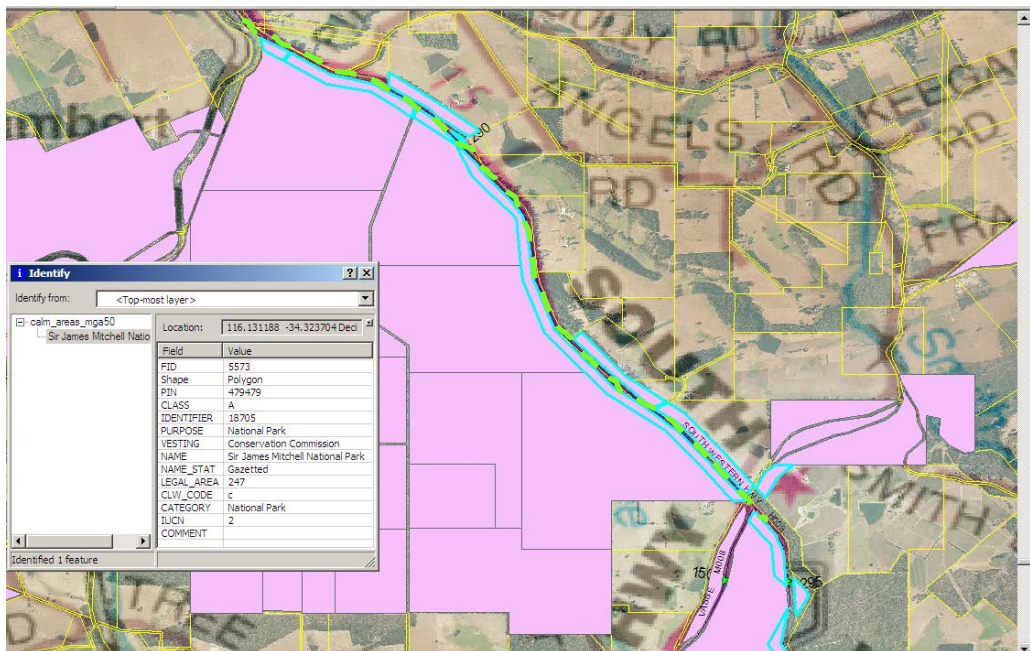
-  National park
-  Nature reserve
-  Conservation park
-  Other reserve ¹
-  Forest conservation area ²
-  State forest, timber reserve
-  Miscellaneous reserve and land held under title by the Executive Director ³
-  Region boundary
-  2000 hectares (area guide)

Draft Forest Management Plan Proposed Land Categories





SLK 280 - 287: CALM Managed Land - Timber reserve on western side of SW Hwy (Main Roads GIS database).



SLK 287 - 295: CALM Managed Land - National Park locations on both sides of SW Hwy (Main Roads GIS database).

34.2432 °S 116.1066 °E / 34.3611 °S 116.1639 °E

South Western Hwy, Manjimup site

* Date Certainty Seen Location Name

Method

Schedule 1 - Fauna that is rare or is likely to become extinct***Dasyurus geoffroii* Chuditch 1 records**

This carnivorous marsupial occupies large home ranges, is highly mobile and appears able to utilise bush remnants and corridors.

Date	Certainty	Seen	Location Name	Method
1989	1	1	MANJIMUP	Day sighting

***Myrmecobius fasciatus* Numbat, Walpurti 1 records**

This diurnal marsupial feeds almost exclusively on termites and is very vulnerable to predation by foxes and cats. It occurs in a variety of habitats including woodland and shrubland where it shelters in hollow logs, tree hollows and burrows.

Date	Certainty	Seen	Location Name	Method
1954	1	1	Manjimup	Day sighting

***Phascogale tapoatafa* ssp. (WAM M434) Brush-tailed Phascogale, Wambenger 14 records**

This arboreal marsupial occurs in forest and woodland where suitable tree hollows are available. Populations fluctuate dramatically in response to invertebrate prey abundance.

Date	Certainty	Seen	Location Name	Method
1953	1	1	Middlesex/Diamond Tree	Dead
1954	1	1	Diamond Tree	Caught or trapped
1982	1	1	Jardee	Dead
1993	1	1	JARDEE	Dead
1993	1	1	MANJIMUP TOWN	
1995	1	1	Manjimup	Dead
1997	1	1	Middlesex	
1999	1	1	MANJIMUP TOWN	Dead
1999	1	1	Manjimup	Dead
1999	1	1	Manjimup	Night sighting
1999	1	1	Manjimup	Day sighting
1999	1	1	Middlesex	Night sighting
2000	1	1	DINGUP	
2001	2	1	Middlesex	Day sighting

***Pseudocheirus occidentalis* Western Ringtail Possum 2 records**

This species occurs in areas of forest and dense woodlands and requires tree hollows and/or dense canopy for refuge and nesting.

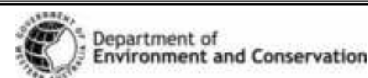
Date	Certainty	Seen	Location Name	Method
1996	1	1	MANJIMUP TOWN	Dead
1997	1	1	Middlesex	Day sighting

***Calyptrorhynchus banksii naso* Forest Red-tailed Black-Cockatoo 8 records**

This subspecies of the Red-tailed Black Cockatoo is restricted to the forests of the south-west. It requires tree hollows to nest and breed and is totally dependent on jarrah-marri forest.

Date	Certainty	Seen	Location Name	Method
1997	1	1	DINGUP	Day sighting
1999	1	4	Diamond Tree	Day sighting
1999	1	4	JARDEE	Day sighting
1999	1	6	Middlesex	Day sighting
2000	1	9	MANJIMUP TOWN	Heard
2000	1	2	MANJIMUP TOWN	Day sighting
2001	1	8	DINGUP	Day sighting
2001	1	4	DIAMOND 1	Day sighting

Thursday, 8 January 2009



34.2432 °S 116.1066 °E / 34.3611 °S 116.1639 °E

South Western Hwy, Manjimup site

* *Date* *Certainty* *Seen* *Location Name**Method****Calyptrorhynchus baudinii*****Baudin's Black-Cockatoo**

2 records

This species is a seasonal visitor to the northern forests and adjacent eastern edge of the coastal plain, feeding on the seeds of eucalypts and various proteaceous species. It breeds in spring/summer in the southern forests, nesting in tree hollows (primarily in Marri).

1998 1 8 Manjimup

Day sighting

1999 1 24 MANJIMUP

Schedule 4 - Other specially protected fauna***Falco peregrinus*****Peregrine Falcon**

1 records

This species is uncommon and prefers areas with rocky ledges, cliffs, watercourses, open woodland or margins with cleared land.

1999 1 1 Manjimup

Day sighting

Priority Five: Taxa in need of monitoring (conservation dependent)***Isoodon obesulus fusciventer*****Quenda**

1 records

This species prefers areas with dense understorey vegetation, particularly around swamps and along watercourses, that provides ample protection from predators.

1993 1 Middlesex

* Information relating to any records provided for listed species:-

Date: date of recorded observation

Certainty (of correct species identification): 1=Very certain; 2=Moderately certain; and 3=Not sure.

Seen: Number of individuals observed.

Location Name: Name of reserve or nearest locality where observation was made

Method: Method or type of observation



Australian Government

Department of Sustainability, Environment, Water, Population and Communities

Contact Officer: Trish Randell
Telephone: (02) 6275 9295 Fax: (02) 6274 1607

File 08/6860

Document No. B11 #354

Resp. Officer PCM S. Jayasekera

Ms Srikanthi Jayasekera
Project/Contract Manager
Main Roads WA
PO Box 5010
BUNBURY WA 6231



Dear Ms Jayasekera

Thank you for providing Trish Randell from this department with a copy of the Targeted Fauna Habitat Assessment for the South Western Highway (Manjimup to Pemberton Turnoff) prepared by Greg Harewood in March 2010.

As you are no doubt already aware, the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) protects all three species of black cockatoos which are found in south-west WA, including Carnaby's, Baudin's and the Forest red-tailed black cockatoos. I am advised that there are permanent populations of all three species in the Manjimup area.

The department is particularly concerned about impacts on the three black cockatoo species due to loss of habitat. Currently, the overall population trend for the species is declining. Black cockatoos are long lived, slow breeding birds that display strong pair bonds and probably mate for life. These characteristics exacerbate the effects of population decline and habitat loss, and make recovery of populations very slow.

Black cockatoos depend on a number of different habitats throughout the year for breeding, foraging and roosting, and for movements between these habitats. Extensive clearing of native vegetation in south west WA has removed, degraded and isolated much of the original habitat used by these birds, resulting in declines in the numbers and ranges of each of the three black cockatoos. There are currently not enough foraging and breeding resources for black cockatoos to sustain the current populations and the protection of remnant vegetation is considered essential to maintain current populations and ensure the survival of the three species.

All three black cockatoos breed in hollows in very long-lived trees. It can take more than two hundred years for a tree to develop hollows large enough for the cockatoos to breed in.

I understand from the Harewood Assessment that the road widening being undertaken by Main Roads WA in the area is likely to have resulted in the removal of 23 trees with hollows, including 8 with hollows large enough to be used by black cockatoos, and a further 27 trees which are potential habitat trees, in all between 2 and 3 hectares of potential breeding habitat.



GPO Box 787 Canberra ACT 2601 Telephone 02 6274 1111 Facsimile 02 6274 1666
www.environment.gov.au



You may be interested to know that past referral decisions have provided precedents for referring similar actions. The most relevant is possibly the proposal by DEVX Pty Ltd & Banksia Partners to undertake sand mining at Lots 2-4 Harvey Road, Karnup (2010/5522). This activity, which will result in the loss of 11 potential and 10 future habitat trees for black cockatoos, was determined to require approval under the EPBC Act and is currently in the assessment phase. Note that each referral is different and each is considered on its merits.

It is our understanding that the road widening program is likely to be continued for a further 100km along the South Western Highway, including through or adjacent to several national parks. If this is the case, we strongly recommend referral of this proposal, not including works undertaken to date, for a decision on whether approval under the EPBC Act is required.

Should you have any questions about the matters raised in this letter please do not hesitate to contact Trish Randell on 02 6275 9295. Alternatively, if you would like to discuss referral of future works you should contact Andrew Weavers, Director of the WA Assessment Section, on 02 6274 2363.

Yours sincerely



Dr Jan Klaver
Director
EPBC Compliance Section (WA)

21 December 2010

2.

Wed 19/01/2011 2:56 PM
Trish

I invited Greg Harwood to respond to your letter (21 December 2010) and Main Roads would like to clarify certain items that you mentioned.

- A Targeted Fauna Habitat Assessment was conducted by Greg Harewood who also assessed the project to determine if it would have a significant impact on black cockatoos using your published guideline "Significant Impact Guidelines 1.1 - Matters of National Environmental Significance". The results of this assessment

determined that the project will **not** have a significant impact on any of the three species of black cockatoos. A copy of this report was submitted to your office by Main Roads on the 28th October 2010.

- Up to 3 ha of vegetation was cleared for the current widening works however, not all of this area is considered potential breeding habitat for black cockatoos. Greg Harewood has commented: "*I estimated in my report that 2 or 3 ha of vegetation would require removal, looks like they have assumed that all or most of this area represented potential breeding habitat. This information wasn't provided in my report so it appears to be an assumption.*"
- Of the eight trees mentioned in the report as having hollows large enough for cockatoos to nest in, Greg has made the following comment: *I never said the hollows were suitable for cockatoos to use...just that the entrances to the hollows appeared big enough, meaning that black cockatoos may use them if it led to a hollow of a suitable size. I did not observe any evidence that any of the hollows were actually in use or had been used by cockatoos in the past.*
- With regard to the possibility of future widening works on South Western Highway; Main Roads' environmental processes will be followed and will include a thorough assessment to determine if there will be a significant impact upon matters of national environmental significance or Commonwealth land.

Additionally, please provide us with the original complaint for our records so that we may notify this person (if necessary) of future clearing along SW Hwy.

Regards

Peter Swanson
Environment Officer
Wheat Belt South / South West Region

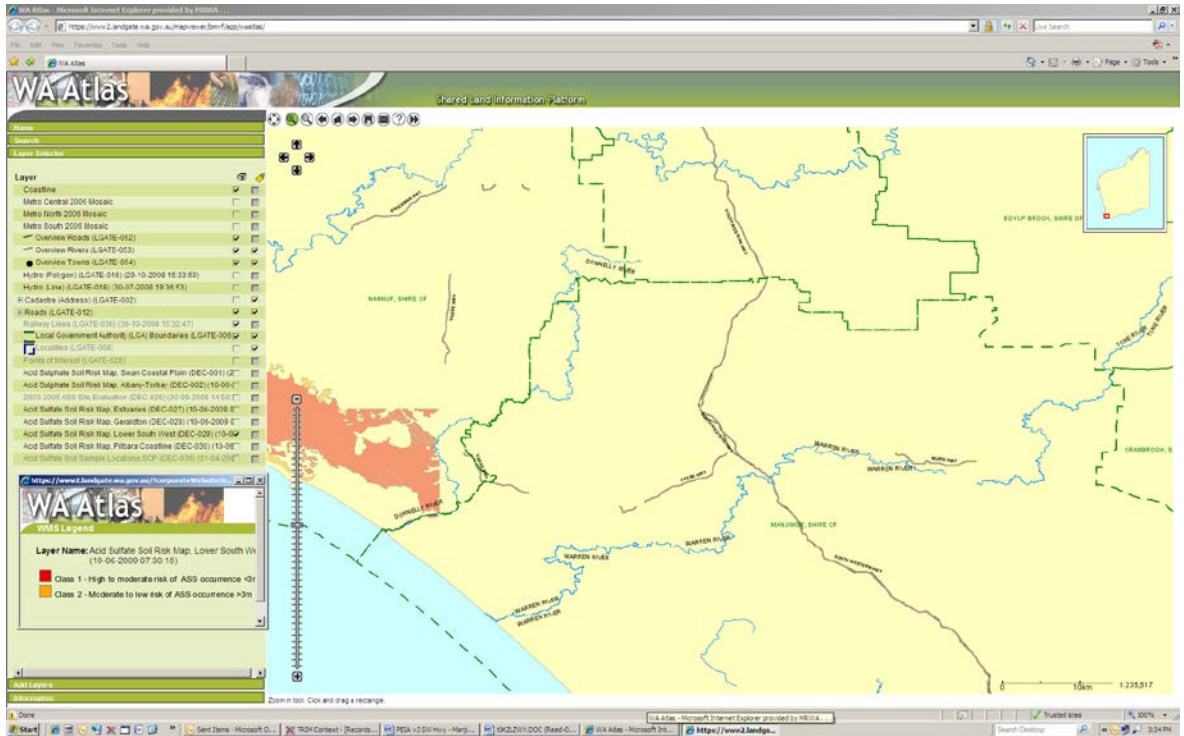


Telephone: (08) 9725 5692 Fax: (08) 9725 5666
Mobile: 0437 318 721
Email: peter.swanson@mainroads.wa.gov.au
www.mainroads.wa.gov.au

Correspondence with DSEWPC (21/12/10) after reviewing the Fauna Survey in response to a complaint (which MRWA has not seen).

Appendix D

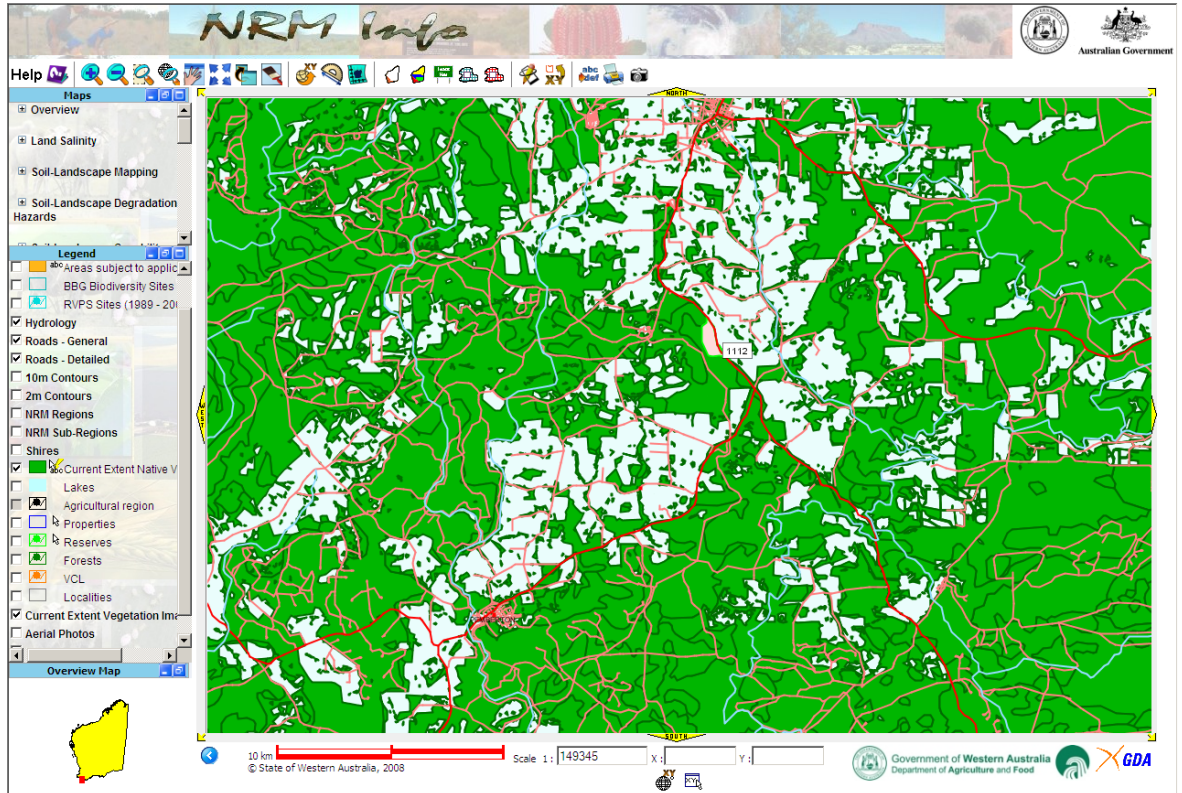
Acid Sulphate Soil search results



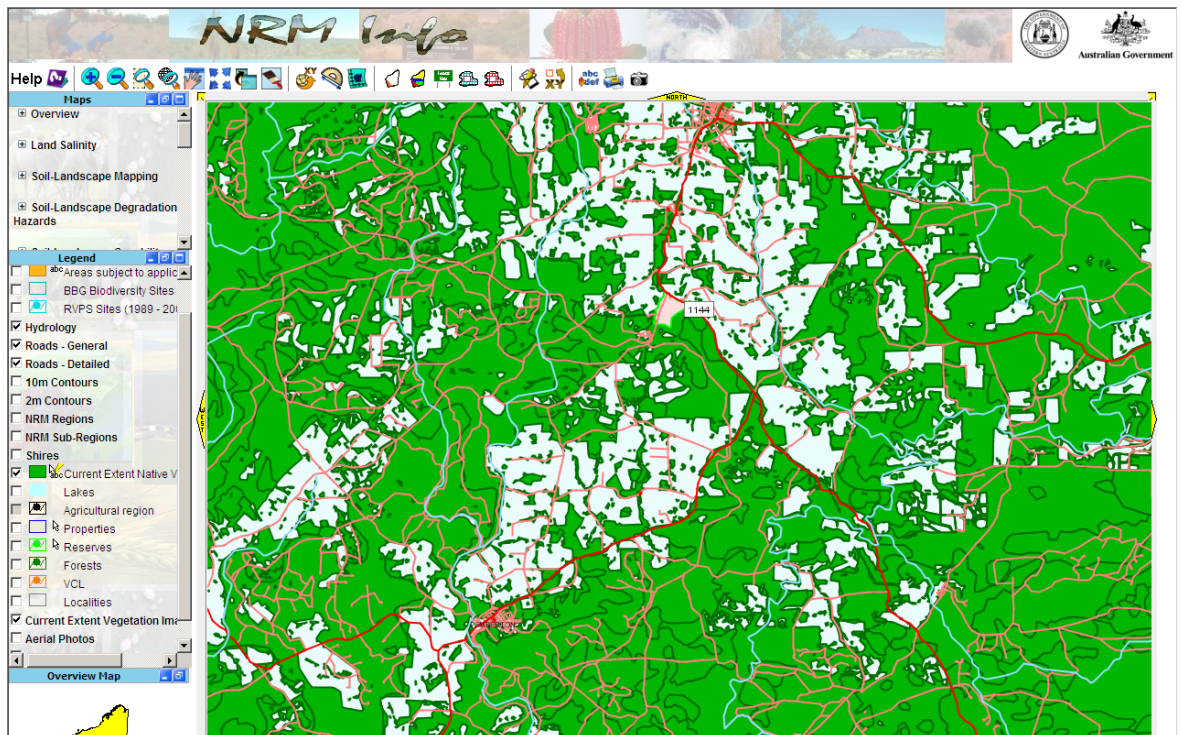
WA Atlas (Landgate): <https://www2.landgate.wa.gov.au/mapviewer/bmvf/app/waatlas/>

Appendix E

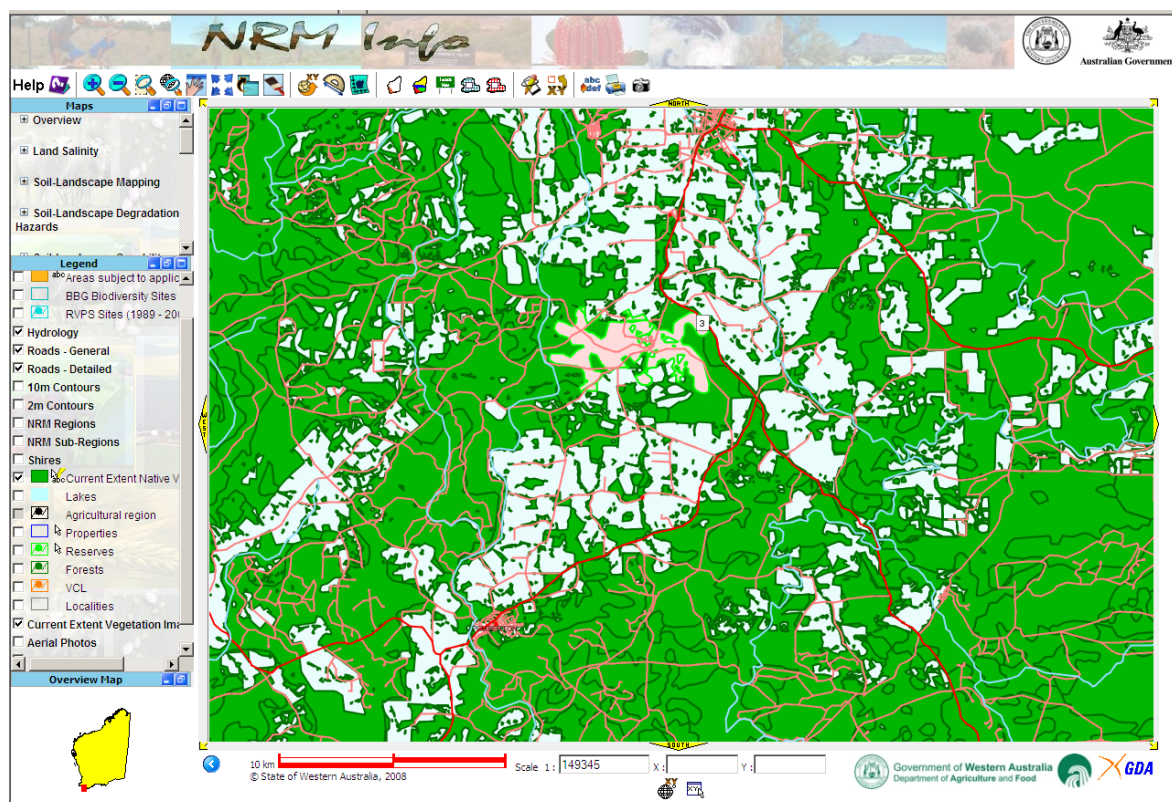
Vegetation Type, Extent and Status



Vegetation Association: 1112



Vegetation Association: 1144



Vegetation Association: 3

Vegetation Association	Vegetation Type (added by TC)	Pre-European Extent	Current Extent	% Remaining
1112	1745	11,189.69	10,828.78	96.77
1144	1774	160,314.85	131,412.09	81.97
3	886	2,661,405.03	1,863,719.41	70.03

Type	Type Description Number	Description	Environmental Descriptor	NVIS Lv2 Structural Formation	NVIS Lv3 - Broad Floristic Formation
1745	1	Mosaic: Tall forest; karri / Tall forest; jarrah & marri	GENERAL	Open forest	Eucalyptus open forest

Type	Type Description Number	Description	Environmental Descriptor	NVIS Lv2 Structural Formation	NVIS Lv3 - Broad Floristic Formation
1774	1	Tall forest; karri & marri (Corymbia calophylla)	GENERAL	Open forest	Eucalyptus open forest

Type	Type Description Number	Description	Environmental Descriptor	NVIS Lv2 Structural Formation	NVIS Lv3 - Broad Floristic Formation
897	1	Medium forest; jarrah-marri	GENERAL	Open forest	Eucalyptus open forest

Vegetation extent by IBRA Region, Sub-region and LGA

IBRA Region Code	IBRA Region Name	IBRA Region Extent	Vegetation Association	Pre-European Extent	Current Extent	% Remaining
JF	Jarrah Forest	4,509,045.88	1112	104.22	100.43	96.36
IBRA Sub Region Code	IBRA Sub Region Name	IBRA Sub Region Extent	Vegetation Association	Pre-European Extent	Current Extent	% Remaining
JF2	Southern Jarrah Forest	2,612,303.82	1112	104.22	100.43	96.36
Local Govt. Authority Name	Local Govt Authority Extent	Vegetation Association	Pre-European Extent	Current Extent		% Remaining
MANJIMUP, SHIRE OF	801,056.48	1112	10,029.71	9,695.65		96.67

Vegetation Association 1112

IBRA Region Code	IBRA Region Name	IBRA Region Extent	Vegetation Association	Pre-European Extent	Current Extent	% Remaining
JF	Jarrah Forest	4,509,045.88	1144	646.67	243.00	37.58
IBRA Sub Region Code	IBRA Sub Region Name	IBRA Sub Region Extent	Vegetation Association	Pre-European Extent	Current Extent	% Remaining
JF2	Southern Jarrah Forest	2,612,303.82	1144	646.67	243.00	37.58
Local Govt. Authority Name	Local Govt Authority Extent	Vegetation Association	Pre-European Extent	Current Extent		% Remaining
MANJIMUP, SHIRE OF	801,056.48	1144	150,788.57	122,184.64		81.03

Vegetation Association 1144

IBRA Region Code	IBRA Region Name	IBRA Region Extent	Vegetation Association	Pre-European Extent	Current Extent	% Remaining
JF	Jarrah Forest	4,509,045.88	3	2,390,590.30	1,657,274.82	69.32
IBRA Sub Region Code	IBRA Sub Region Name	IBRA Sub Region Extent	Vegetation Association	Pre-European Extent	Current Extent	% Remaining
JF2	Southern Jarrah Forest	2,612,303.82	3	1,484,240.74	917,735.77	61.83
Local Govt. Authority Name	Local Govt Authority Extent	Vegetation Association	Pre-European Extent	Current Extent		% Remaining
MANJIMUP, SHIRE OF	801,056.48	3	287,390.86	244,323.78		85.01

Vegetation Association 3

Appendix F

Australian Heritage Places Inventory

Heritage Council of Western Australia

Municipal Heritage Inventory Database Search



Australian Heritage Database

39 results found.

Blackbutt Area Drum Rd	Wheatley, WA, Australia	(Interim List) Register of the National Estate
Caladenia Harringtoniae Site B Moriarty Rd	Wheatley via Manjimup, WA, Australia	(Interim List) Register of the National Estate
Caladenia Harringtoniae Site C Sears Rd	Wheatley via Manjimup, WA, Australia	(Interim List) Register of the National Estate
Caladenia Harringtoniae Site D Weedy Rd	Deanmill, WA, Australia	(Interim List) Register of the National Estate
Caladenia Harringtoniae Site E South Western Hwy	Palgarrup, WA, Australia	(Interim List) Register of the National Estate
Clover Cottage Group Wheatley Coast Rd	Nyamup, WA, Australia	(Indicative Place) Register of the National Estate
Deeside Homestead Group Muirs Hwy	Strachan via Nyamup, WA, Australia	(Indicative Place) Register of the National Estate
Dingup Anglican Church Balbarrup Rd	Balbarrup via Manjimup, WA, Australia	(Identified through State processes) Register of the National Estate
Dingup Area Franco Rd	Dingup via Manjimup, WA, Australia	(Interim List) Register of the National Estate
Dingup Homestead Group Dingup Rd	Dingup via Manjimup, WA, Australia	(Indicative Place) Register of the National Estate
Donnelly River Mill Andrew Rd	Wheatley, WA, Australia	(Indicative Place) Register of the National Estate
Fernhill Homestead Perup Rd	East Manjimup, WA, Australia	(Registered) Register of the National Estate
Fernslopes House Group Pudding Brook Rd	Manjimup, WA, Australia	(Indicative Place) Register of the National Estate
Finsbury Garden Muirs Hwy	Nyamup, WA,	(Indicative Place)

	Australia	Register of the National Estate
Fontys Pool and Gardens Seven Day Rd	Deanmill, WA, Australia	(Registered) Register of the National Estate
Giblett - Hawke Area Vasse Hwy	Pemberton, WA, Australia	(Interim List) Register of the National Estate
Karri Management Priority Areas Seven Day Rd	Pemberton, WA, Australia	(Registered) Register of the National Estate
Lake Muir Homestead Thomson Rd	Lake Muir via Unicup, WA, Australia	(Indicative Place) Register of the National Estate
Lindsay - Solai Forest Area Record Rd	Deanmill, WA, Australia	(Rejected Place) Register of the National Estate
Manjimup House Young St	Manjimup, WA, Australia	(Indicative Place) Register of the National Estate
Old Upper Warren School/St Marks Church Wheatley Coast Rd	Upper Warren via Nyamup, WA, Australia	(Indicative Place) Register of the National Estate
One Tree Bridge Area Davidson Rd	Wheatley, WA, Australia	(Rejected Place) Register of the National Estate
Perup Homestead, Shed and Stock Yard Perup Road	Perup via Manjimup, WA, Australia	(Indicative Place) Register of the National Estate
Riverside Farm Group Muirs Hwy	Murtinup, WA, Australia	(Indicative Place) Register of the National Estate
Rockbridge Homestead Ruin Rockbridge Rd	Quininup, WA, Australia	(Indicative Place) Register of the National Estate
Smith Brook Area Smith Brook Rd	Walkalwararup via Middlesex, WA, Australia	(Interim List) Register of the National Estate
South West Karri Forests South Western Hwy	Pemberton, WA, Australia	(Rejected Place) Register of the National Estate
Springdale Farmhouse Booth Rd	Manjimup, WA, Australia	(Indicative Place) Register of the National Estate
Strickland MPA and adjacent forest Vasse Hwy	Peerabeelup via Pemberton, WA, Australia	(Rejected Place) Register of the National Estate
Thornton Area South Western Hwy	Palgarrup, WA, Australia	(Indicative Place) Register of the National Estate

Tobacco Farm Buildings (former)	8 Plunkett St	Manjimup, WA, Australia	(Destroyed) Register of the National Estate
Tobacco Farm Group (No.1)	Graphite Rd	Manjimup, WA, Australia	(Destroyed) Register of the National Estate
Tobacco Farm Group (No.2)	Burnside Rd	Manjimup, WA, Australia	(Indicative Place) Register of the National Estate
Upper Warren School (former)	Wheatley Coast Rd	Upper Warren via Quininup, WA, Australia	(Indicative Place) Register of the National Estate
Warrup Area	Corbalup Rd	Manjimup, WA, Australia	(Interim List) Register of the National Estate
West Beavis Block (part)	Seven Day Rd	Peerabeelup via Pemberton, WA, Australia	(Removed from Register or IL) Register of the National Estate
Wheatley Mill Forest Area	Donnelly Mill Rd	Wheatley, WA, Australia	(Rejected Place) Register of the National Estate
Yeticup Area	Perup Rd	Nyamup, WA, Australia	(Indicative Place) Register of the National Estate
Youngs Homestead	Youngs Rd	Nyamup, WA, Australia	(Indicative Place) Register of the National Estate

Report Produced: Thu Dec 18 18:31:07 2008

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Displaying results: [1-50] of 71



Navigate: [1-50][51-71]

[ALCO Fire Tower](#) (18453)

Manjimup

OTHER REGISTER INFORMATION:

WHAT IS THE STATE REGISTER? OTHER HERITAGE LISTS

<input type="checkbox"/>	Agricultural Bank (fmr), Manjimup (1501)	Cnr Mount & Rose Sts, Manjimup
<input type="checkbox"/>	Balganup Slab Hut and Stock Yards (11425)	Boat Landing Rd, D'Entrecasteaux Nat Pk, off Vasse Hwy, Manjimup
<input type="checkbox"/>	Baptist Church (1491)	Bath St, Manjimup
<input type="checkbox"/>	Beard Fire Lookout Tree (18468)	Manjimup
<input type="checkbox"/>	Bridge over the Shannon River (11428)	Chesapeake Rd, Manjimup
<input type="checkbox"/>	Brockman Homestead (3143)	Manjimup
<input type="checkbox"/>	Coodamurrup Homestead (11426)	Broke Inlet Rd, Manjimup
<input type="checkbox"/>	Deeside Homestead Group (1713)	Muir's Hwy, Manjimup
<input type="checkbox"/>	Diamond Tree Fire Lookout Tower (16020)	Manjimup, Manjimup
<input type="checkbox"/>	Dingup Hall (11430)	Fernhill Rd, Manjimup
<input type="checkbox"/>	Dingup Homestead Group (1711)	Dingup Rd, Manjimup
<input type="checkbox"/>	Dix Vale Hall (3189)	near Dixvale & Yanmah Roads, Manjimup
<input type="checkbox"/>	Dunreath Homestead (1719)	Muir's Hwy, Manjimup
<input type="checkbox"/>	Fernhill Homestead (1503)	Perup Rd, East Manjimup
<input type="checkbox"/>	Fernslopes House Group (1725)	Perup Rd, Manjimup
<input type="checkbox"/>	Fonty's Pool (4469)	Seven Day Rd, Manjimup
<input type="checkbox"/>	Forestry Cottage 316 (17488)	316 Paten Road, Manjimup
<input type="checkbox"/>	Forestry Cottage 666 (17489)	666 Paten, Manjimup
<input type="checkbox"/>	Giblett Homestead (fmr) (1724)	Young St, Manjimup
<input type="checkbox"/>	Giblett Street Commercial Precinct (11429)	Giblett St, Manjimup
<input type="checkbox"/>	Glenoran Fire Lookout Tower (18463)	Manjimup
<input type="checkbox"/>	Glenview Tobacco Farm (fmr) (8237)	Ralston Rd, Manjimup
<input type="checkbox"/>	Graphite Mine - Site of (11420)	Henwood Rd, near One Tree Bridge, Manjimup
<input type="checkbox"/>	Group Settlement Houses (1718)	Moore St, Manjimup
<input type="checkbox"/>	Group Settler's Cottage (16152)	off South West Highway, Manjimup
<input type="checkbox"/>	Homeleigh (7098)	Muir's Hwy, Nyamup via Manjimup  [Error! Hyperlink reference not valid.]
<input type="checkbox"/>	Jarrah Trees (4369)	Gordon Block, Manjimup
<input type="checkbox"/>	Karri Trees - The Four Aces (4368)	Near One Tree Bridge, Manjimup
<input type="checkbox"/>	Kepal Fire Tower (18446)	Kerup Road, about 2.6km NE of PERup Road junction, Manjimup
<input type="checkbox"/>	Kingston House (17481)	Mottram Street, Manjimup

<input type="checkbox"/>	Lake Muir Homestead (1717)	Thompson Rd, Manjimup
<input type="checkbox"/>	Manjimup CWA Hall (11372)	34 Giblett St, Manjimup
<input type="checkbox"/>	Manjimup Fire Station (14595)	Bath Rd, Manjimup
<input type="checkbox"/>	Manjimup Hotel (1497)	Giblett St, Manjimup
<input type="checkbox"/>	Manjimup Infant Health Centre (fmr) (11375)	Cnr Rutherford & Moore Sts, Manjimup  [REG] 
<input type="checkbox"/>	Manjimup Police Station (fmr) (1490)	Giblett St, Manjimup
<input type="checkbox"/>	Manjimup Post Office (1499)	Giblett St, Manjimup
<input type="checkbox"/>	Manjimup Recreation Ground Gates (11374)	Moore St, Manjimup
<input type="checkbox"/>	Manjimup Timber Park (11376)	Cnr Rose & Edwards Sts, Manjimup
<input type="checkbox"/>	Manjimup Timber Park/Museum (18457)	Manjimup
<input type="checkbox"/>	Manjimup Uniting Church & Hall (1492)	Bath St, Manjimup
<input type="checkbox"/>	Manjimup War Memorial (13048)	CoronationPk Giblett St, Manjimup
<input type="checkbox"/>	Manjimup-Deanmill Tramway (3959)	Manjimup
<input type="checkbox"/>	Masonic Lodge (1494)	Cnr Mount & Bath Sts, Manjimup
<input type="checkbox"/>	Mayfield Park Homestead (1714)	Edwards Rd, Manjimup
<input type="checkbox"/>	Muir's Hut and Yards (3140)	Cnr Deeside Coast & Preston Rds, Manjimup
<input type="checkbox"/>	Muir's Deeside Coast Rd (11427)	Muir's-Deeside Coast Rd, Manjimup
<input type="checkbox"/>	National Bank (1498)	65 Giblett St, Manjimup
<input type="checkbox"/>	Old Pioneering Schoolroom, Manjimup Primary School (3284)	Rutherford St, Manjimup

Navigate: [\[1-50\]](#)[51-71]

<input type="checkbox"/>	One Tree Bridge over Donnelly River (1716)	Graphite Rd, Manjimup
<input type="checkbox"/>	Paling's Bridge (1721)	Paling's Rd, Manjimup
<input type="checkbox"/>	Perup Homestead (1722)	Perup Rd, Manjimup
<input type="checkbox"/>	Police Lock-up (fmr) (1502)	Mount St, Manjimup
<input type="checkbox"/>	RSL Hall (1495)	Cnr Bath & Brockman Sts, Manjimup
<input type="checkbox"/>	Red Tingle Tree (4239)	Red Tingle Dv, Manjimup
<input type="checkbox"/>	Ringbark Tennis Club (11423)	Ringbark Rd, Manjimup
<input type="checkbox"/>	Riverside Farm House Group (1720)	Muir's Hwy, Manjimup
<input type="checkbox"/>	SSM No 2 Steam Locomotive, Sotico office (11261)	South Western Hwy, Manjimup
<input type="checkbox"/>	Shops (1500)	Giblett St, Manjimup

<input type="checkbox"/>	Soap Stone Quarry (11422)	Balbarrup Rd, Manjimup
<input type="checkbox"/>	Springdale Farmhouse (3821)	Muir's Hwy, Manjimup
<input type="checkbox"/>	St Martin's Anglican Church (1496)	Cnr Brockman & Moore Sts, Manjimup
<input type="checkbox"/>	Tobacco Farm Group (No.1) (1715)	Graphite Rd, Manjimup
<input type="checkbox"/>	Tobacco Farm Group (No.2) (1712)	Burnside Rd, Manjimup
<input type="checkbox"/>	Tobacco Rural Training Centre (fmr) (5976)	Burnside Rd, Manjimup
<input type="checkbox"/>	Tobacco Shed and Kiln (1723)	Plunket St, Manjimup
<input type="checkbox"/>	Tone River Wilderness Cottages (17867)	RMB 120 Muir's Highway, Manjimup
<input type="checkbox"/>	Warren Bicentennial Tree Lookout (18447)	5km south west of Pemberton, Manjimup
<input type="checkbox"/>	Warren District Hospital (11373)	Hospital Av, Manjimup
<input type="checkbox"/>	Warren River Railway Bridge (15404)	Picton-Northcliffe Railway, Manjimup

Municipal Heritage Inventory Database Search

23/01/09

Hi Peter

With regards to your email received 23 December 2008 and your phone call today regarding heritage sites from Muir's Highway intersection to the Vasse Highway turnoff.

I have had a look on our MI and the only place that I could find was the Diamond Tree, which is out near Eastbourne Road. The only other place of any significance would be the Manjimup Cemetery that is not on our MI.

Should you have any further queries, please do not hesitate to contact me.

Regards

Kaylene Roberts

Customer Liaison Officer
Planning Services
Shire of Manjimup

Appendix G

Department of Indigenous Affairs Database Search





Government of Western Australia
Department of Indigenous Affairs

Aboriginal Heritage Inquiry System


DEPARTMENT OF INDIGENOUS AFFAIRS

What do you want to do? [Search](#) | [Metadata](#) | [Feedback](#) | [DIA Home](#) | [Getting Started](#)

Search for Sites in... : ...

[show legend](#)    

next map



next map

Sites in a search box

Aboriginal Heritage Sites found: 0

[Clear Results](#)

[Printable - All results \(with map\)](#)

Show on map

Aboriginal Sites

Heritage Surveys

[refresh](#) [more](#)



Map size

Small

Medium

Large

Street State

[zoom in](#)  [zoom out](#) 

Geographic (non projected) map. Datum: GDA94. Scalebar is indicative only.

Latitude: -34°21'32" Longitude: 116°9'49"

Northing: 6197710 Easting: 423109 Zone: 50

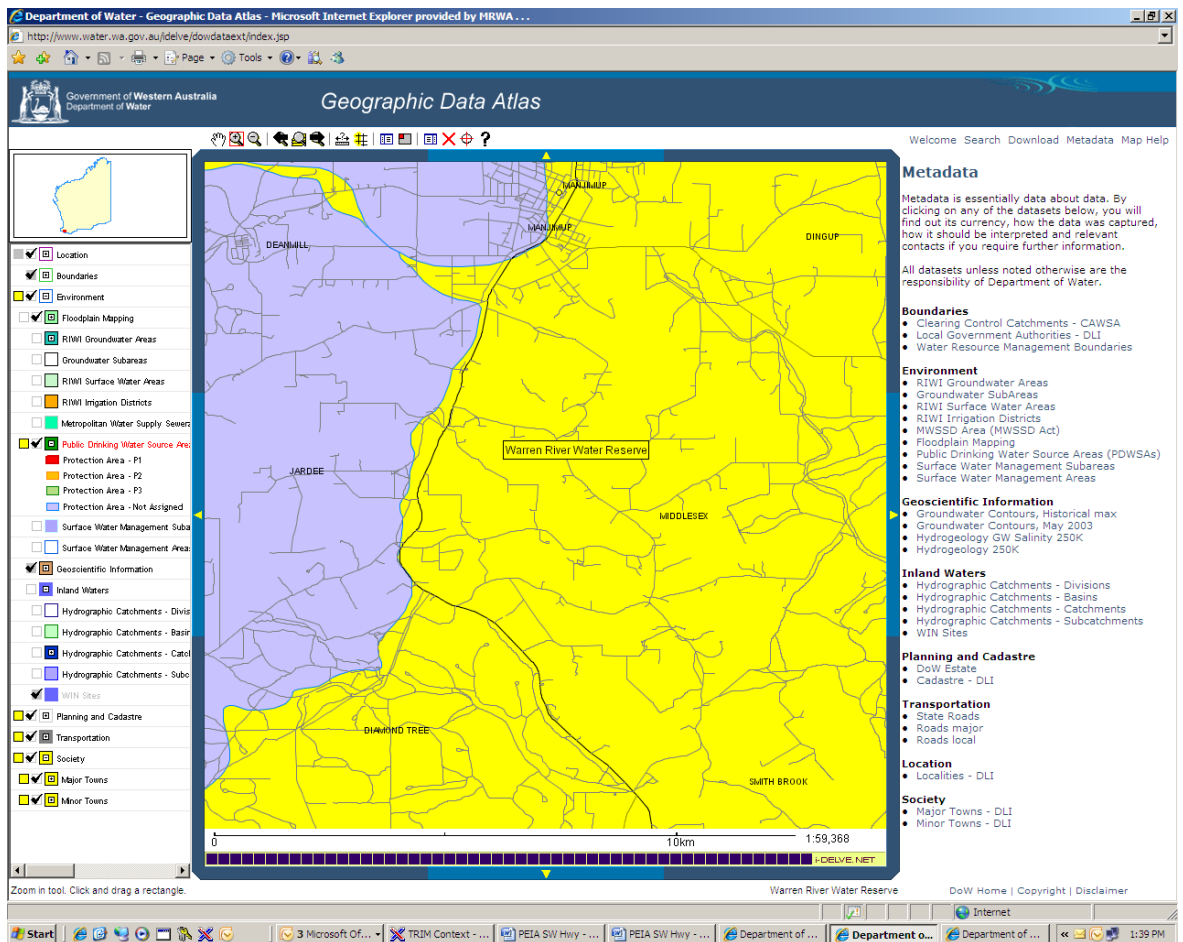
Map Sheet: PEMBERTON (S15010)

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Appendix H

DoW's Sensitive Water Resources Database Search



Appendix I

Department of Agriculture and Food Declared Plants survey results

Tue 21/04/2009 11:50 AM

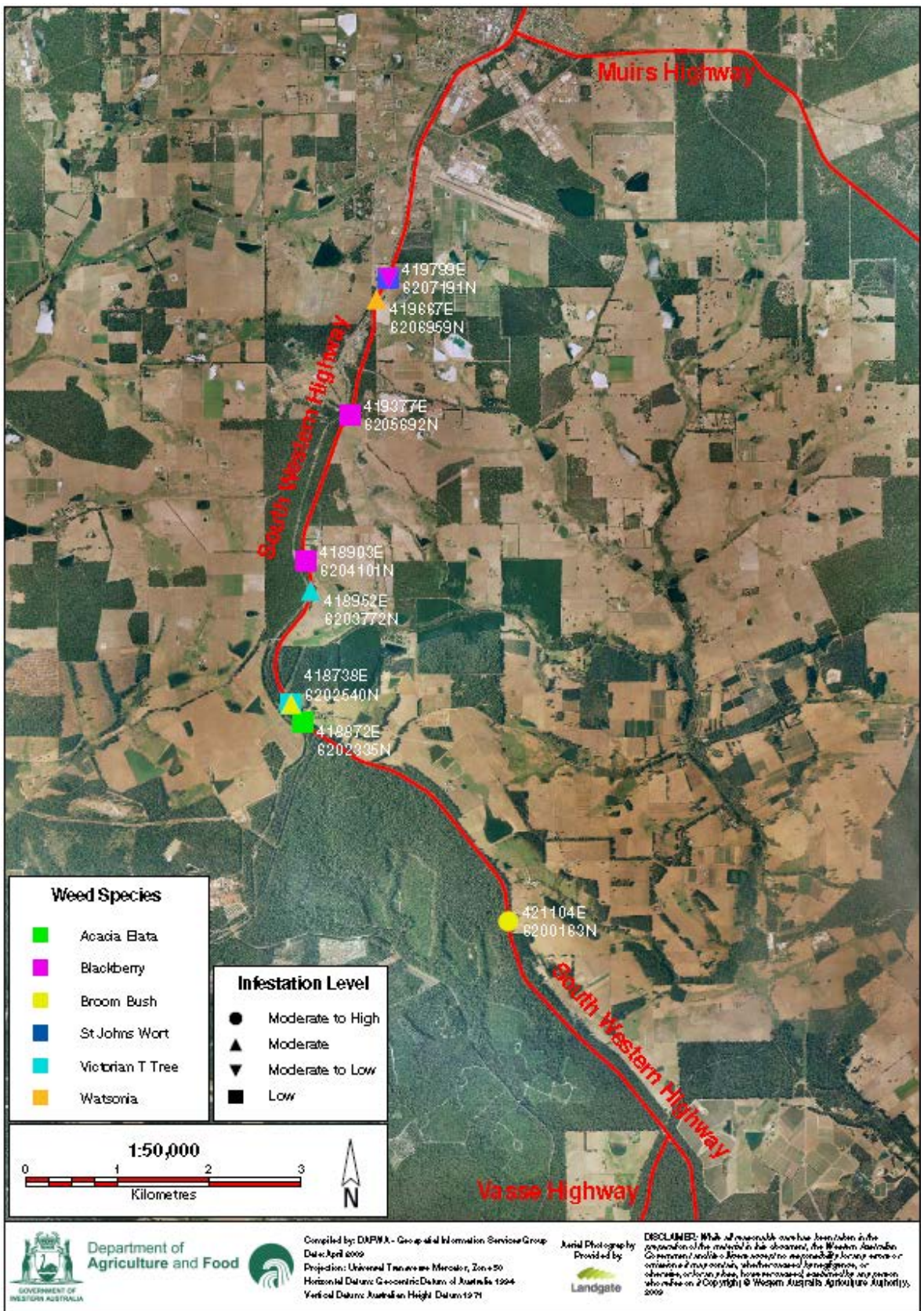
Hi Peter

Attached is a map of the weeds locations and the original spreadsheet.

Peter Gardiner
Research Officer
Department of Agriculture and Food, WA

South Western Highway, Bunbury
PO Box 1231. Bunbury WA 6231
Phone: (08) 9780 6228
Mobile: 0409885820
Facsimile: (08) 9780 6136
peter.gardiner@agric.wa.gov.au
www.agric.wa.gov.au (see Maps and Data)

WEED SPIECES	GPS CO-ORDINATES	LEVEL OF INFESTATION
(DP) Blackberry	E/ 0419799 - N/ 6207191	MODERATE TO LOW
	E/ 0418903 - N/ 6204101	LOW
	E/ 0419377 - N/ 6205692	LOW
Victorian T Tree	E/ 0418738 - N/ 6202540	LOW
	E/ 0418952 - N/ 6203772	MODERATE
Broom Bush	E/ 0418738 - N/ 6202540	MODERATE
	E/ 0421104 - N/ 6200163	MODERATE TO HIGH
(DP) St Johns Wort	E/ 0419799 - N/ 6207191	LOW
Acacia Elata	E/0418872 - N/ 6202335	LOW
Watsonia	E/0419667 - N/ 6206959	MODERATE



Department of Agriculture and Food, WA weed location map

Appendix J

Correspondence with DEC re Dieback

Thu 16/04/2009 3:34 PM

Hi Peter,

Due to the uncertainty of dieback information directly adjacent to the road there is merit in undertaking an assessment to determine protectable areas. Without this assessment information there would be a requirement to use dieback free gravel and appropriate clean down procedures, too minimise spread from the proposed works.

Regards,
Ian

From: SWANSON Peter (EO/A) [mailto:peter.swanson@mainroads.wa.gov.au]

Sent: Monday, 30 March 2009 4:40 PM

To: Wilson, Ian

Subject: RE: Dieback mapping

Thanks for the info below Ian; and the phone conversation today.

However, could you supplement this information a little?

Taking into consideration the limited scope of the proposed works (widening only) and the high exposure of the site to public access; would you consider there is value in undertaking further investigations or assessments along this section of the highway?

As discussed, it would seem that the most important management criteria would be to avoid the import of dieback infested material. This is a standard project practice for Main Roads in regard pathogens and weeds and can be adequately covered by inclusion in the Environmental Management Plan for the project as well as standard clean down procedures for machinery, etc.

Please provide your response to this as an appropriate management procedure.

Much appreciated
Peter

From: Wilson, Ian [mailto:Ian.Wilson@dec.wa.gov.au]

Sent: Tuesday, 17 March 2009 9:23 AM

To: SWANSON Peter (EO/A)

Cc: District, Donnelly

Subject: RE: Dieback mapping

Hi Peter,

I have checked with the relevant people with relation to dieback assessment. No dieback assessment work is known to have been undertaken within the Road Reserve along the nominated section of Highway.

A number of environmental weeds (Watsonia & African cornflag) occur along the section of Highway between Eastborne and Vasse Highway
Regards,

Ian Wilson

District Nature Conservation Coordinator,
Donnelly District,
Department of Environment and Conservation,
PO Box 20, Pemberton, 6260
Ph: (08) 97717903 Fax: (08) 97712677
Mob: 0429 105 680
Email: ian.wilson@dec.wa.gov.au

From: SWANSON Peter (EO/A) [mailto:peter.swanson@mainroads.wa.gov.au]
Sent: Wednesday, 18 February 2009 3:48 PM
To: Wilson, Ian
Cc: District, Donnelly
Subject: RE: Dieback mapping

Ian
I spoke by phone with you about this info some time ago.
Could you please provide me with an update or send through any available data.
Thanks
Peter

From: SWANSON Peter (EO/A)
Sent: Friday, 23 January 2009 10:58 AM
To: 'donnelly.district@dec.wa.gov.au'
Subject: Dieback mapping

Main Roads is proposing to undertake road widening works along approximately 14 kilometers of South Western Highway from Manjimup to the Vasse Highway turnoff (SLK 280-294.3).

I am compiling a Preliminary Environmental Impact Assessment and require information regarding the prevalence of dieback in this location.

I would appreciate if you could provide me with information regarding the risk of encountering dieback and/or areas that are considered dieback free so that appropriate management can be implemented.

Thanks

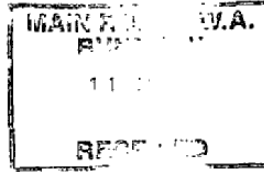
Peter Swanson
Environment Officer/A
South West Region
Main Roads Western Australia
www.mainroads.wa.gov.au

phone: 08 9725 5661 | fax: 08 9725 5666
M: 0418 931 078



Government of **Western Australia**
Department of **Environment and Conservation**

Your ref: 280-294.3 SLK(H9)
Our ref: Utilities
Enquiries: Peter Barness
Phone: 97 717 998
Fax: 97 771 363
Email: Peter.Barness@dec.wa.gov.au



Regional Manager
Main Roads WA
PO Box 5010
BUNBURY WA 6230

Attention: Peter Swanson

No. 08/6860
Document No. B11#597
Resp. Officer PEO Swanson
Related B11#590

Dear Peter

Subject: Project 280-294.3 SLK (H9) South West Highway Upgrade Manjimup – Advice on Basic Raw Material Dieback Hygiene Status

The Department of Environment and Conservation (DEC) acknowledges your email request dated 13 December 2010 in which you are seeking advice on the dieback hygiene status of gravel proposed to be used on the above project.

It is DEC's understanding that the hygiene status of the proposed gravel pit cannot be accurately determined. In the interest of minimising the potential of spreading disease, we recommend that you employ the services of a suitably qualified hygiene interpreter. Private contractors or DEC's Forest Management Branch can provide the expertise to review the situation and assist in developing a pit management plan that minimises the risk of spreading disease.

This will provide sufficient information for your decision making on where it is appropriate to use this resource, how you manage vehicles and equipment working with this resource.

In regard to this project, DEC considers the use of gravel that is not proven to be dieback free is acceptable. This is because the area of native vegetation where the gravel will be used is either infected or unprotectable from the future spread of disease. DEC suggests an amended EMP is to be submitted to reflect this change.

If the gravel pit is located on DEC managed land we should be advised of its location. This is to ensure that the proposed disturbance is compliant with the Forest Management Plan 2003-2013 in regard to the informal reserves that exist along the highway under this plan.

Should you require any further information please contact Peter Barness on 97 717988.

Yours sincerely

Peter Keppel
Regional Manager
Warren Region

5 January 2010

Warren Region
Brain Street, Manjimup
Phone: (08) 97 717 988 Fax: (08) 97 771 363
Postal Address: Locked Bag 2, Manjimup, Western Australia 6258
www.dec.wa.gov.au

Reviewed dieback advice from DEC (05/01/11)

20/01/2011 10:36 AM

Sri

I have spoken with Peter Keppel (Regional Manager DEC Manjimup) regarding their letter (5 January 2011).

Although the letter is somewhat suggestive of some actions from our side, he assures me that there is no need to engage a consultant or develop a pit management plan, considering that most of the work has already been done and the project area is considered to be unprotectable.

I have amended the EMP and included this letter in an appendix to reflect that the use of dieback free material is not a requirement.

I have also included the letter from DSEWPC (feds) along with my response to clarify their statements.

Cheers

Peter Swanson

Appendix K

Site Photos



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6



Photo 7



Photo 8

Appendix L

Vegetation Clearing Assessment Report

MRWA Vegetation Clearing Assessment Report

This report has been prepared to assist MRWA in addressing condition 7 "Assessment of Clearing Impacts" under Clearing Permit CPS 818/3.

For guidance on how to complete the form, refer to DEC completed reports (active permits) at http://203.20.251.100/cps_reports/.

AREA UNDER ASSESSMENT DETAILS

Proponent details

Proponent's name:	MRWA
Contacts:	Name: Peter Swanson
	Phone: 9725 5661
	Fax: 9725 5666
	Email: peter.swanson@mainroads.wa.gov.au

Property details

Property:	Road reserve along South Western Highway
Colloquial name:	

Area under assessment

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:	Site Plan Attached
<3ha	~350	Manual & mechanically	Road widening	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Avoidance/Minimise clearing

How have the clearing impacts been minimised?

Survey has been undertaken to identify the location of trees with a girth >500mm. at 1.3m above the ground
Road centreline will be shifted to avoid as many significant trees as possible.
Clearing of vegetation is only to the extent of providing safe clear zones to acceptable standards.

BACKGROUND

Existing environment and information

Generally the vegetation in the vicinity is in Very Good condition. The trees to be cleared however are on the edge of the road way and have been inflicted by natural and traffic disturbances.

(Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community.

Site Visit Undertaken	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Fauna / Flora Survey Undertaken	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Site Report Attached	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Fauna / Flora Survey Report Attached	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Site Photos Attached	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Other Relevant References Attached	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Vegetation Complex	Clearing Description	Vegetation Condition	Comment
Mosaic: Tall forest; karri / Tall forest; jarrah & marri Tall forest; karri & marri (Corymbia calophylla) Medium forest; jarrah-marri	Mechanical / hand	Native vegetation condition is generally good	

ASSESSMENT OF APPLICATION AGAINST CLEARING PRINCIPLES

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

Comments	Proposal is NOT LIKELY to be at variance to this Principle Each of the vegetation complexes within the project area is well represented with 93.6, 79.3 & 70% respectively. The vegetation proposed to be cleared is on the edge of the road way and in most instances only specific individual specimens will need to be removed, so will not significantly reduce fauna habitat. Most of the forest that is adjacent to some sections of the project area is in good or better condition and there are significant areas of similar vegetation in the local area. There are no instances of significant flora or priority ecological communities in the project area. Therefore the clearing will not compromise a high level of biodiversity.
Methodology	Site inspection and land (significant tree) survey SLIP NRM database & Main Roads file "Native Vegetation in Western Australia - Extent, Type and Status" (<i>car_reserve_analysis_2006.xls</i>) Main Roads GIS data base search (DEC shape file)

(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 Proposal is NOT LIKELY to be at variance to this Principle

Most of the trees to be removed will be specific individual specimens which are not considered as significant habitat for fauna. The trees tend to be healthy specimens with no broken limbs or rotted cavities to provide nesting hollows. The limited number of Marri trees to be removed will not significantly reduce food sources for the Black Cockatoo. The project area is surrounded by large expanses of forest providing ample fauna habitat and foraging sites.

Methodology Site inspection and land (significant tree) survey

(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

No rare flora is registered as being present in the project area.

Methodology Department of Environment and Conservation (DEC) Native Vegetation Map Viewer.
<http://maps.dec.wa.gov.au/idelve/nv/index.jsp>
DEC consultation
Main Roads GIS data base search (DEC shape file)

(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 Proposal is NOT LIKELY to be at variance to this Principle

No priority or threatened ecological communities are registered as being present in the project area.

Methodology Department of Environment and Conservation (DEC) Native Vegetation Map Viewer.
<http://maps.dec.wa.gov.au/idelve/nv/index.jsp>
DEC consultation
Main Roads GIS data base search (DEC shape file)

(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 Proposal is NOT LIKELY to be at variance to this Principle

Each of the vegetation complexes (1112, 1144 & 3) within the project area is well represented with 96.77, 81.97 & 70.03% respectively throughout the State. Within the IBRA Region – 96.36, 37.58 & 69.32%; IBRA Sub-region – 96.36, 37.58 & 61.83% and LGA – 96.67, 81.03 & 85.01.

The vegetation proposed to be cleared is on the edge of the road way and in most instances only specific individual specimens will need to be removed. Most of the forest adjacent to some sections of the project area is in good or better condition.

Methodology SLIP NRM database & Main Roads file "*Native Vegetation in Western Australia - Extent, Type and Status*" (*car_reserve_analysis_2006.xls*)
EPA Guidance Statement No.19 'Guidance for the Assessment of Environmental Factors (Environmental Offsets), 2008.

(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 Proposal is NOT LIKELY to be at variance to this Principle

No watercourses or wetlands are registered as being present in the project area..

Methodology Commonwealth Department of Environment, Water, Heritage and the Arts (DEWHA) mapping tool (<http://www.environment.gov.au/apps/boobook/mapervlet?app=pmstand>) and Department of Water Geographic Data Atlas mapping tool. (<http://www.water.wa.gov.au/idelve/dowdataext/index.jsp>)
Main Roads GIS data base search (DEC shape file)

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

Comments Proposal is NOT LIKELY to be at variance to this Principle

The limited extent of the proposed clearing is unlikely to cause appreciable land degradation.

Methodology Site inspection

(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 Proposal is NOT LIKELY to be at variance to this Principle

Some sections of the project area are adjacent to the Sir James Mitchell National Park, however the limited clearing proposed will be within the road reserve and will not have a deleterious effect to these areas and where possible, clearing will occur on the opposite side of the road.

Prevention of weed dispersal will need to be managed in accordance with the EMP.

Methodology Department of Environment and Conservation (DEC) Native Vegetation Map Viewer.

<http://maps.dec.wa.gov.au/idelve/nv/index.jsp>

Main Roads GIS data base search (DEC shape file)

(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 Proposal is NOT LIKELY to be at variance to this Principle

The proposed work is of a limited nature and will not cause deterioration of surface or groundwater. The drainage system will not be altered from the current alignment.

Methodology Site inspection

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

Comments Proposal is NOT LIKELY to be at variance to this Principle

The proposed work is of a limited nature and will not cause or exacerbate the incidence or intensity of flooding. The drainage system will not be altered from the current alignment.

Methodology Site inspection

Planning instrument, Native Title, RIWI Act Licence, EP Act Licence, Works Approval, Previous EPA decision or other matter.

Comments

Methodology

SUBMISSIONS

If required have submissions been requested and addressed

Submission Requested from	Request Sent (Date)	Submission Received (Date)	Issues Raised / Comments Made
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ASSESSOR'S RECOMMENDATIONS

List of Principles seriously at variance, at variance or maybe at variance

Recommendation:

The proposed clearing is NOT at variance any of the Clearing Principles, therefore no further assessments need to be undertaken in order to use Main Roads Clearing Permit CPS 818/4.

OFFICER PREPARING REPORT

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Position: Title

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Date: February 2010

Appendix M

References

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