



Government of
Western
Australia



**ALBANY – LAKE GRACE ROAD M001 /
FORMBY SOUTH ROAD M015
INTERSECTION UPGRADE
68.83 – 69.82 SLK**

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

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ALBANY – LAKE GRACE ROAD / FORMBY SOUTH ROAD INTERSECTION UPGRADE

COMBINED ENVIRONMENTAL REPORT

1. PROJECT DESCRIPTION

Main Roads Great Southern Region proposes to widen the southern side of the Albany - Lake Grace Road (68.83 – 69.82 SLK) locally known as Chester Pass Road either side of Formby South Road intersection to accommodate the installation of a right turn auxiliary lane for south bound traffic to pass traffic turning into Formby South Rd and to provide an acceleration lane for south bound traffic exiting Formby South Road in the Shire of Gnowangerup to reduce traffic conflict and increase traffic safety at this site.

The sealed widening works will increase traffic efficiency for heavy haulage vehicles on the main road (Albany – Lake Grace Road) and increase safety for commuter and tourist traffic entering and exiting Formby South Road.

2. BACKGROUND

This intersection is located on Albany – Lake Grace Road M001 at 69.48 SLK (left hand side within the Stirling Range National Park approximately 40 kilometres south of Borden and 82 kilometres north of the centre of Albany). The intersection is situated on a straight section of alignment with a 2.5% downward grade to the north with a slight crest at approx. 70 m south of the intersection and a crest at approximately 860 m south of the intersection. However, the approach sight lines along Albany – Lake Grace Road are adequate.

Albany - Lake Grace Road is the main arterial heavy haulage route connecting the northern communities of Borden, Ongerup, Nyabing, Pingrup and Lake Grace to the Albany town and port. This route caters for all types of tourist traffic as well as all freight and grain cartage from these communities. There are a number of major tourist attractions along this route including the Stirling Range National Park incorporating various mountains including Bluff Knoll, Toolbrunup Peak and Mt Trio; wineries and the Porongurup Ranges. Traffic volumes on this route are increasing as a result of increases in tourism and industry in the region.

This intersection is also the end of the Formby South Road M015 at 48.78 SLK approximately 55 km south of Gnowangerup.

Formby South Road is the main arterial connecting road between Gnowangerup and the Albany - Lake Grace Road subsequently linking to Albany in the south. This is the most direct route for vehicles heading south from surrounding communities adjacent to Gnowangerup. This road caters for all tourist, general, grain and livestock cartage movements from surrounding areas.

It is considered that to cater for the present and increased future traffic volumes utilising the Formby South Road and Albany – Lake Grace Road that a right turn auxiliary lane for south bound traffic to pass traffic turning into Formby South Rd and an acceleration lane for south bound traffic exiting Formby South Road is warranted to reduce traffic conflict and increase traffic safety at this site. The right turn auxiliary lane allows traffic to turn right from the north and the acceleration lane allows through traffic to pass through the intersection on Albany – Lake Grace Rd whilst travelling south without conflict.

This proposal is part of an ongoing program of upgrading all Main Roads intersections to safely accommodate turning traffic whilst allowing continuity for through traffic.

Additionally, as this intersection is susceptible to flooding, it is proposed to upgrade three existing transverse culverts, two across and under Albany –Lake Grace Road south of the intersection and another diagonally across the intersection of Formby South Rd to provide a level of serviceability in the order of a 1 in 20 year flooding event. The existing drainage pattern will be maintained.

As per Main Roads' Environmental Assessment and Approvals process, the Low Impact Screen Checklist has been completed for the proposal, refer Appendix A. As the proposed works require clearing of native vegetation, 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

Main Roads Great Southern Region proposes to install / construct:

- A right turn auxiliary lane on the northern side of the intersection for south bound traffic to turn from Albany – Lake Grace Road into Formby South Rd.
- An acceleration lane on the eastern side of the intersection (opposite Formby South Road) for south bound traffic. The acceleration lane allows road trains to increase speed on a gradual climb uphill before entering the through traffic lane on Albany – Lake Grace Road.
- Seal widening of the fishtail on the north western side of Formby South Road to cater for road trains turning north into Albany – Lake Grace Road.

Works will be fully contained within the existing unsurveyed road reserve (inside the Stirling Range National Park). These works have been planned for the 2006 / 07 financial year with clearing to be conducted prior to and in conjunction with the commencement of works.

The project area encompasses, for the right turn auxiliary and acceleration lane on the eastern side of Albany – Lake Grace Rd, an average 10 m (maximum 15 m) width (from existing seal edge to the toe of batter).

The location of the study area is shown on Figure 1.



FIGURE 1: INTERSECTION LOCATION

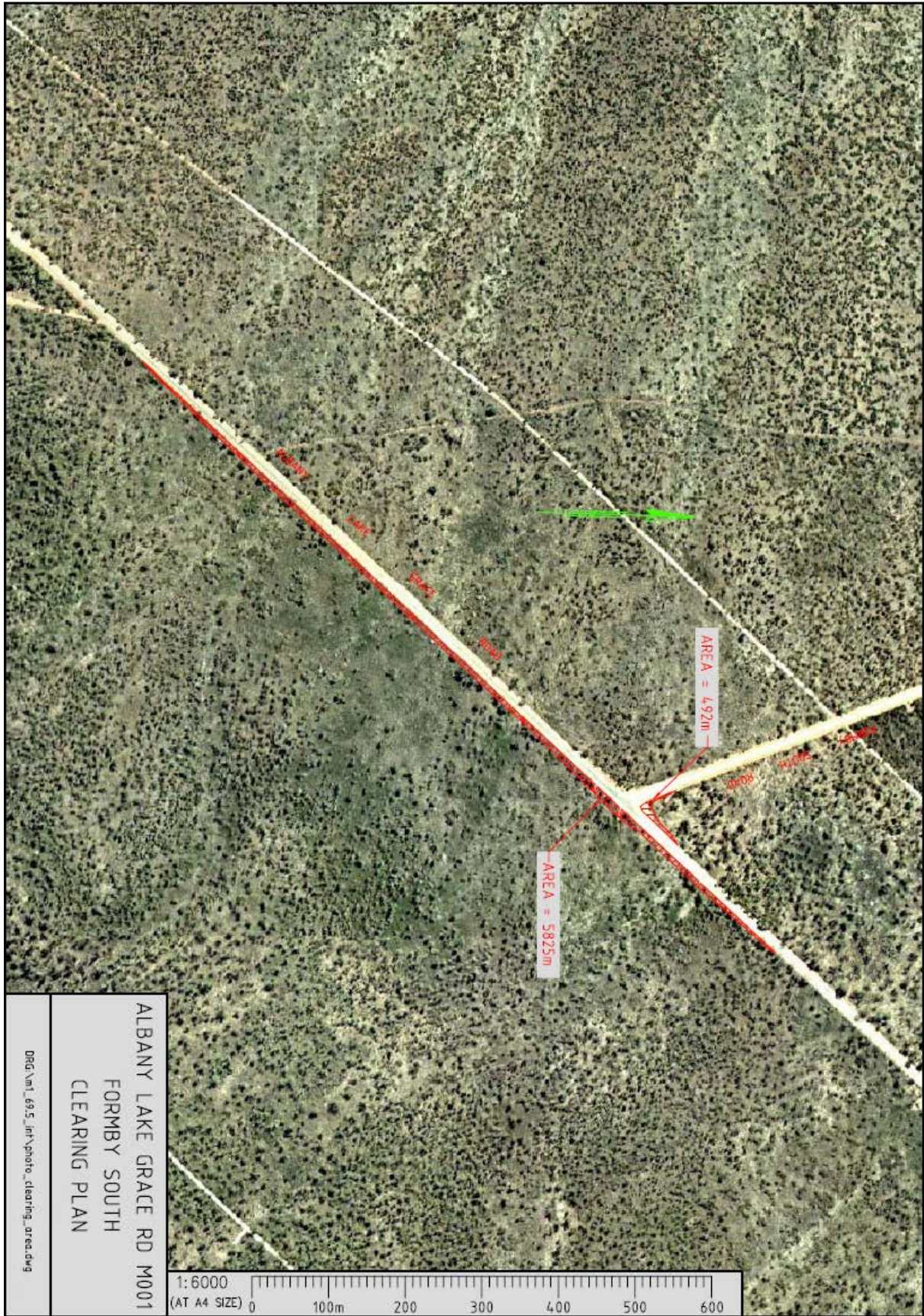


FIGURE 2: CLEARINGT AREA PLAN

Road:	M001 Albany – Lake Grace Rd	SLkm:	68.83 – 69.82
Length:	990 m		
Existing Pavement:	2 x 3.1 m wide traffic lanes + 2 x 0.9 m wide unsealed shoulders		
Existing Speed Limit	110 km/h		
Auxiliary / Acceleration or Climbing Lane:	Southbound – 220 m long with 2 x 120 m tapers (auxiliary lane) with a 420 m long with a 200 m end taper (acceleration or climbing lane) 1 x 3.5 m traffic lane 1 x 0.6 m wide sealed shoulder 1 x 1.4 m unsealed shoulder		
Timing:	Clearing: Prior to / in conjunction with the road works. Road works: 2006 – 2007 financial year. Duration: <u>6</u> weeks		
Clearing Requirements:	Total approx. 0.6837 ha. Approx. 0.6299 ha of vegetation on the eastern side of Albany – Lake Grace Rd for auxiliary / acceleration or climbing lane and 0.0538 ha for Formby South Rd fishtail widening on northwest corner of intersection. Vegetation is Jarrah +/-Marri Open Woodland over Open Heath or Shrubland and Open Sedgeland		
Materials:	It is proposed to extend the gravel pit on Albany – Lake Grace Rd (<u>Sands pit</u>) on the northern side of the Stirling Range National Park.		
Land Acquisition:	Not Applicable. As the proposed project is within an unsurveyed road reserve through the Stirling Range National Park.		

3.1 Methodology

3.1.1 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.

Wetlands

There were no locations of wetlands identified within or adjacent to the project area. Determined using the Commonwealth Department of Environmental and Heritage (DEH) mapping tool, Department of Environment (DoE) Environmentally Sensitive Area (ESA) mapping tool (http://portal.environment.wa.gov.au/portal/page?_pageid=53,2569721&_dad=portal&_schema=PORTAL)

Refer Appendix F.

Threatened Flora, Fauna and Communities, Conservation Reserves and ESA's

Department of Conservation and Land Management's (CALM)'s database was searched for known populations of threatened flora, fauna and Threatened Ecological Communities (TECs) and conservation reserves. Refer Appendix B.

An initial Vegetation and Flora Survey was completed by Ms. Libby Sandiford in October 2003 and revised in July 2006 to extend the initial survey. This was due to the change of project scope because of the introduction of the acceleration lane and widening of the Formby South Rd fishtails. Her revised report (Refer Appendix B) advises:

- No Declared Rare Flora (DRF) species were located or known to occur within the survey area.
- Three priority species, *Verticordia brevifolia* subsp. *stirlingensis* P2, *Calothamnus affinis* P4 and *Chordifex isomorphus* P4 were located.
- A fourth species – *Synaphea preissii* P3 may also be present. Specimens resembling this species were recorded and it has previously been recorded in the vicinity of the intersection, however positive identification requires mature flowers – absent at the time of survey.

Verticordia brevifolia subsp. *stirlingensis* P2.

Two plants were found occurring approximately 10 m from the formation edge along the eastern side of Albany – Lake Grace (Chester Pass) Rd. Most populations of this species are found within the Stirling Ranges.

Calothamnus affinis P4 was present in low numbers within the survey area on the eastern side of Chester Pass Road. This shrub species is endemic to the Stirling Ranges occurring on lateritic gravel soils on the lower slopes and valleys of the park.

Chordifex isomorphus P4 was found scattered in low to moderate numbers throughout the survey area. This large rush has previously been recorded from two disjunct areas, growing in dry or wet sand and laterite from Mt Barker, Stirling Ranges to Cheynes Beach and ironstone pavements in seasonally inundated area in Scott River and Busselton.

Vegetation

Most of the triangle of land on the northwest corner of the intersection has been previously cleared and regeneration is sparse – forming a Low Open to Open Shrubland over Very Open Sedgeland. Common species include *Acacia saligna*, *Grevillea crassifolia*, *Calothamnus sanguineus*, *Agonis theiformis*, *Acacia drummondii*, *Allocasuarina humilis*, *Kunzea recurva*, *Beaufortia anisandra*, *Lomandra nutans*, *Mesomelaena stygia* and *Chordifex isomorphus* P4.

The vegetation adjoining the proposed acceleration or climbing lane and narrow strip of undisturbed bushland north west of the heritage plaque is dominated by Jarrah Open Woodland over Tall Open Scrub or Open Heath over Low Shrubland and Open Sedgeland.

The density and floristics of the understorey varies slightly according to soils present. Subdominant trees include *Corymbia calophylla*, *Eucalyptus decipiens* and *Eucalyptus ?decurva*. Common shrubs include *Hakea ambigua*, *Hakea trifurcata*, *Hakea undulata*, *Beaufortia anisandra*, *Beaufortia schaueri*, *Taxandria spathulata*, *Agonis theiformis*, *Gastrolobium retusum*, *Calothamnus sanguineus*, *Leucopogon gibbosus*, *Dryandra armata*, *Verticordia habrantha*, *Dryandra brownii* and *Acacia baxteri*. Common sedges and rushes include *Tetraria octandra*, *Tetraria capillaris*, *Anarthria gracilis*, *Desmocladius fasciculatus*, *Mesomelaena tetragona*, *Lepidosperma species* and *Chordifex isomorphus* P4.

The project section occurs on the border of the Avon and Roe Botanical sub-districts of the South west Botanical Province where there is a general change from woodland to mallee (Beard 1990).

For fauna and TEC information, refer to the CALM database searches at Appendix B. Due to the minor amount of clearing however, it is deemed that the intersection upgrade will not significantly impact on any of the listed threatened species of fauna.

Additional information regarding CALM advice on priority flora is attached in Appendix J.

Air Quality

The need for a local air quality assessment was determined using the criteria outlined in the MRWA environmental guideline, Air Quality. There are no sensitive local receivers.

Heritage

Non-indigenous heritage was examined utilising the Australian Heritage Places Inventory (<http://www.heritage.gov.au>), Heritage Council of Western Australia (<http://register.heritage.wa.gov.au/>) and the Shire of Gnowangerup's Municipal Heritage Inventory (<http://register.heritage.wa.gov.au/index.html>), with nothing identified within the vicinity of the project area. Refer Appendix C.

There is a heritage plaque at the northwest corner of the intersection, not within the project area, commemorating the opening of the Formby South Road (construction jointly funded by Main Roads and the Shire of Gnowangerup) opened by Hon. Minister for Transport Eric Charlton on 13 July 1993.

Aboriginal Heritage

A search of the Department of Indigenous Affairs' (DIA's) (<http://www.dia.wa.gov.au/Heritage/SitesSurveysSearch.aspx>) database was undertaken to determine whether the project area contains any sites of Aboriginal heritage with nothing identified within the vicinity of the project area. Refer Appendix D.

In addition to this, representatives of the various Aboriginal families with Native Title interests in the area where also consulted, with an on-site visit carried out on 26 November 2003 to

ensure that the project area does not disturb any sites of Aboriginal Heritage significance. Signed statements have been obtained advising that nothing was identified within the vicinity of the project area.

Sensitive Water Resources

DEC's database was checked for Public Drinking Water Supply Areas, with nothing identified within the vicinity of the project area. Refer Appendix E.

Contaminated Sites

As the project area is within the Stirling Range National Park that is controlled by CALM, there is no evidence of contamination and no known history of being contaminated or being adjacent to any contaminated sites therefore it is not considered a contaminated site.

A search of DoE's contaminated sites registry was not considered warranted or undertaken.

Acid Sulfate Soils

The Western Australian Planning Commission's acid sulfate soils maps were reviewed and the self assessment done (<http://www.wapc.wa.gov.au/Publications/213.aspx>) to determine what level of risk the project area is exposed to, refer Appendix G.

As there is a low level of risk as acid sulfate soil no further action was deemed to be warranted.

Weeds

Consultation was undertaken with the Department of Agriculture to determine whether there are any known populations of declared plants or significant weeds in or adjacent to the project area.

Keith Devenish (District Manager – Jerramungup) has advised by e-mail dated Monday 29 March 2004 that Wayne Ledger (Biosecurity Officer) has no problems from their perspective. Refer Appendix H.

Dieback

Advice regarding the broad dieback status of the project area was sought from the regional office of Department of Conservation and Land Management (CALM) with their Phytophthora Coordinator Mr Greg Freebury (Nature Conservation Officer) providing a report dated 3 February 2004 advising that the intersection of Albany – Lake Grace Road / Formby South Road is the site of an old infestation and all the road verges associated with the intersection are infected and unprotectable. Refer Appendix I.

3.1.2 Site Investigation

A site inspection was carried out by Main Roads (Ms Jeanette Della Bona) and CALM Park Rangers (Mr Luke Coney and Mr Geoff Harnett) on 25 September 2003.

It was identified that:

- Fauna known to occur in the area includes Chuditch, Quokka, Bandicoot, Numbat and Mallee Fowl (with a recent sighting of a Chuditch road kill nearby).

A further site visit has been carried out by Geoff Hands - Project Manager (Minor Works) on 11 May 2006 to examine the general features of the area. Other issues that were considered included topography, the impacts on creek lines, property access and the potential for noise and vibration impacts (dilapidation).

During the site investigations the area of the proposed work site was photographed and recorded.

In addition to these investigations, an independent Vegetation and Flora survey of the proposed roadwork site was completed on 6 October 2003, with revision in July 2006. The broad vegetation types in the vicinity of the project area were identified. Refer Appendix C.

The area of unsurveyed road reserve to be cleared along the eastern side of Albany – Lake Grace Road opposite and to the south of Formby South Road totals approx. 0.6837 ha. Approx. 0.6299 ha of vegetation on the eastern side of Albany – Lake Grace Rd for acceleration lane along a section 960 m long and 0.0538 ha for Formby South Rd fishtail widening on northwest corner of intersection.

The maximum width of clearing will be 15 m width from existing seal edge to the toe of batter directly opposite the Formby South Rd intersection. In addition to this width an existing survey benchmark opposite Formby South Rd intersection will be required to be relocated approximately 5 m from the toe of the batter.

Both the Project Manager and independent site inspections reported that the presence of weeds was low and that no declared weeds were observed.

Investigation of the site also concluded that there are no drainage areas or wetlands in the vicinity of the worksite.

Land use in the area is not applicable as all the adjoining land is in the Stirling Range National Park.



PLATE 1 – Albany - Lake Grace (Chester Pass) Road - facing east from south of Formby South Road



PLATE 2 – Formby South Road intersection with Albany - Lake Grace Road (facing north from right hand side of Albany – Lake Grace Road)



PLATE 3 – View of vegetation to be impacted on the left hand side of photo along Albany - Lake Grace Road right hand side (facing south) i.e. location of proposed right turn auxiliary / acceleration or climbing lane.



PLATE 4 – View of vegetation to be impacted on the right hand side of photo along Albany - Lake Grace Road right hand side (facing north) i.e. location of proposed right turn auxiliary lane.



PLATE 5 – View of verge vegetation from Formby South Road junction at the location of the proposed right turn auxiliary lane facing north along Albany - Lake Grace Road right hand side.



PLATE 6 – Culvert outlet drain to diagonal skewed culvert at junction of intersection on eastern side



PLATE 7 – Evidence of Dieback infestation in / adjacent to the project area.



PLATE 8 – Left turn into Formby South Road (heading north) from Albany – Lake Grace Road. No works required.



PLATE 9 – View showing vegetation on northern side of Formby South Road (facing north) from Albany – Lake Grace Road. It appears that that there is partial revegetation of an old stockpile site on this northwest corner of the intersection with the heritage plaque (Refer Plate 10) also located on this site. Fishtail widening is required on this corner.



PLATE 10 – Heritage plaque commemorating the opening of Formby South Road (construction jointly funded by Main Roads and the Shire of Gnowangerup) by Hon. Minister for Transport Eric Charlton on 13 July 1993 located on the northwest corner of the intersection. To be relocated to allow fishtail widening for Formby South Road.



PLATE 11 & 12 Photos taken previously on 1 October 2003 showing extent of flooding on the southern side of Formby South Road at the Albany – Lake Grace Road intersection. Culverts to be upgraded (increased in size) to accommodate this excess water without changing drainage pattern.

4. EXISTING ENVIRONMENT

The landscape consists of flat plains lying on the northern boundary of the Stirling Range Formation abutting the granitoid Archean Yilgarn Block. Soils consist of colluvial piedmont deposits and alluvial fans derived from the Stirling Range Formation. These soils include sands and silts and gravels of sandstone, quartzite, quartz and ferruginous sandstone (Semeniuk in Thompson et al (1993)). The vegetation of the area has previously been mapped as Wandoo Woodland, (Keighery and Beard in Thompson et al (1993)) and lies near the boundary of the Stirling Range and Quaalu Systems in the Eyre botanical District (Beard 1979).

5. CLEARING OF NATIVE VEGETATION

Under the amended *Environmental Protection Act 1986 (EP Act)* clearing of native vegetation must be under the authority of a clearing permit.

With this project being minor in scale and in the close proximity of existing dump sites, aggregate sources and distance to work bases, there will be no clearing required for either the searching or extraction of suitable materials, stockpiling of materials, any temporary vehicular tracks or construction work camps.

In addition due to the physical location and road alignment in this project, no vegetation clearing will be required for sight distance requirements.

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 Appendix F.

6. ASSESSMENT OF ASPECTS AND IMPACTS

Table 1: Aspects and Impacts: Albany – Lake Grace Rd / Formby South Rd intersection upgrade

Aspect	Evaluation of Potential Impacts
Air quality	Not relevant to the proposed works. Local air quality assessment is not required for the project since: <ul style="list-style-type: none"> • the predicted traffic flow is less than 10,000 vehicles per day (in urban areas) or 15,000 vehicles per day in rural areas; and <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. No major sensitive receivers adjacent to the proposed works, but excessive dust could impact vegetation adjacent to the proposed works. Activities will need to be subject to dust suppression to control short-term dust generation. Likely to be easily managed by standard construction dust management techniques.
Fauna	No significant fauna issues associated with any of the proposed upgrade works. Due to the proposed work occurring in a large (115,000 ha) National Park, clearing is small and unlikely to impact on native fauna. Recommendations to minimise clearing (see below) will also serve to reduce impacts to fauna and remnant fauna habitat at the site.
Vegetation – clearing	The native vegetation to be cleared will be done so using the Main Roads' purpose permit with an offset as the project occurs within an ESA (Stirling Range National Park). Vegetation clearing limits should be clearly established for each area as part of the

Table 1: Aspects and Impacts: Albany – Lake Grace Rd / Formby South Rd intersection upgrade

Aspect	Evaluation of Potential Impacts
	final design and pegged on-site prior to any works commencing. Provided clearing limits are adhered to, there are no significant vegetation impact issues associated with the proposed works.
Vegetation – Threatened Ecological Communities (TECs) / Declared Rare Flora (DRF)	No DRF species have been identified or are known within the project area. Areas outside the project area must not be disturbed as part of the proposed works. Consultation with CALM confirms that the project is not going to have any significant impacts on TECs.
Vegetation – weeds	There is a low presence of common weed species occurring throughout the proposed works area. The risk of spreading these weed species or introducing others as part of the proposed work should be minimised. Standard weed hygiene measures should be applied for all earthworks in the area, including ensuring that plant and equipment brought on to the site are clean of soil. Consultation with the Department of Agriculture confirms that there are no declared weeds in the project area.
Vegetation – dieback	Advice from CALM indicates that the area should be treated as dieback infected and unprotectable. To be managed using standard dieback management practices. No topsoil is to be reused from this site.
Reserves / Conservation areas	The intersection widening is located adjacent to a large sensitive conservation area (Stirling Range National Park) with the proposed clearing relatively small therefore anticipated impact is minimal. Provided clearing of the more intact vegetation is minimised, and that the works do not intrude into intact vegetation areas beyond the project area, there will be minimal impacts to this site.
Heritage (non-indigenous)	A search of the Australian Heritage Places Inventory, Heritage Council of Western Australia and the Shire of Gnowangerup’s Municipal Heritage Inventory on-line databases has indicated that there are no heritage listed sites present in the currently proposed works areas.
Aboriginal heritage	A search of DIA database identified no known sites of significance within the vicinity of the project area. Consultation with the DIA and the Aboriginal community has confirmed that no further investigations are required for all aspects of the project.
Surface water/drainage	Consultation with the Department of Water has confirmed that the proposed works will not modify any existing drainage and surface run-off patterns.
Wetlands	There are no wetlands within the vicinity of the project area.
Groundwater	No dewatering nor no major drainage modifications are required, hence no change to groundwater level or quality. Any water used on site will be obtained from local sources and used with care to ensure no imported or onsite water contamination occurs.
Visual amenity	The proposed works will result in minor and short-term visual impacts during construction. No site completion treatment is deemed to be required.
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 works are within an unsurveyed road reserve (Stirling Range National Park) and

Table 1: Aspects and Impacts: Albany – Lake Grace Rd / Formby South Rd intersection upgrade

Aspect	Evaluation of Potential Impacts
	no known previous land use activities on or adjacent to the project area have had the potential to create contamination e.g. petrol station.
Salinity	Given the nature and scale of the project the impact is not relevant. There were no visual signs of salinity observed in the project area.
Acid Sulfate Soils	The WAPC’s self-assessment (Planning Bulletin 64) indicates that no further soil investigation is required for the project.
Statutory Land Use Planning	As the proposed works is entirely within the existing unsurveyed road reserve (inside of the Stirling Range National Park), no further amendments would be required to the Local Government Planning Scheme or Region Scheme.

7. DECISION TO REFER

Given the scale of the project, the low significance of its impacts to the surrounding environment and the environmental management measures proposed, the project does not require referral to the WA Environmental Protection Authority (EPA) or the Commonwealth Department of the Environment and Heritage (DEH).

8. ENVIRONMENTAL MANAGEMENT PLAN

This section of the report (the EMP) has been developed for the project area following the completion of the preceding sections. The main aims 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 Roads Tender Document Procedure (TDP) Specifications 203, 204, 301, 302 and 304 are still to be followed where applicable.

It is critical that all clearing works are carried out in accordance with the management measures prescribed in TDP Specifications 301 (Clearing) and 302 (Earthworks). Also note that all revegetation works should be carried out in accordance with the Main Roads Environmental Guideline Revegetation Planning and Techniques.

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

- Area of management (e.g. vegetation);
- Timing of the various management requirements;
- Management objectives for each area;
- Management strategies that are necessary to minimise the impact;
- Person/s responsible for implementing the management action; and
- On whose advise or Main Roads requirement

The project specific management measures and environmental management measures / conditions are to be included in contract documentation and implemented for this project.

Action: Project Manager / Contractor

ENVIRONMENTAL MANAGEMENT PLAN

Area of management	Timing	Management objective	Management Strategy	Responsibility	Whose advice
Vegetation Clearing - Record-keeping	All phases of Construction	All projects should maintain the required records relating to clearing native vegetation under the purpose permit	Clearing: <ul style="list-style-type: none"> • a copy of the PEIA & EMP (Minor projects) for small projects; • a map showing the location where the clearing occurred, recorded in an ESRI Shapefile; • the size of the area cleared (in hectares); • the dates on which the clearing was done. 	Project Manager	DEC
			Each offset implemented: <ul style="list-style-type: none"> • a copy of each offset proposal; • a map showing the location of any offset implemented recorded in an ESRI Shapefile; • a description of the offset implemented; and the size of the area of the offset (in hectares). 	Project Manager	DEC
			Control of weeds, dieback and other pathogens: <ul style="list-style-type: none"> • a copy of any management plan prepared; and • for any pathogen other than dieback, the appropriate steps taken 	Project Manager	DEC

ENVIRONMENTAL MANAGEMENT PLAN

Area of management	Timing	Management objective	Management Strategy	Responsibility	Whose advice
Vegetation - Clearing	Pre-Construction	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
			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.	Project Manager	Main Roads
			Prior to the start of clearing operations the clearing line is to be established. Clearing shall be restricted to 1 m from the edge of works with no additional clearing for topsoil storage or machine access.	Project Manager / Contractor	Main Roads
			Any stockpiled vegetation from clearing works shall not be burnt.	Contractor	Main Roads
	Construction		During construction works, damage to existing vegetation will be avoided as far as is practicable. Mature trees are to be conserved as far as is practicable and shall not be disturbed for temporary works such as access tracks, spoil areas or site offices. Vehicles and equipment is not to be parked or driven over tree roots. Trees to be removed are to be felled in a manner that ensures they fall within the approved clearing area.	Contractor	Main Roads
			Topsoil shall be stripped to a depth of 100 mm from the works area at the commencement of roadworks with the unsuitable topsoil disposed of at an approved spoil site.	Contractor	Main Roads

ENVIRONMENTAL MANAGEMENT PLAN					
Area of management	Timing	Management objective	Management Strategy	Responsibility	Whose advice
Surface Drainage	Pre-Construction	Maintain the hydrological regime that exists prior to the construction of the proposal	<p>Stormwater drainage shall be treated and disposed of in accordance with DoE requirements.</p> <p>The proposed drainage design will generally maintain existing surface drainage patterns within the project area.</p>	<p>Project Manager</p> <p>Project Manager / Project Designer</p>	DoE
Visual Amenity	Pre-Construction	Ensure that the road blends in with the surrounding environment	Ensure that the road blends in with the surrounding environment.	Project Manager	Main Roads
Weed Management	Construction	Minimise the introduction and spread of weeds	<p>The following machinery and vehicle hygiene measures will be utilised to avoid the inadvertent spread of weeds within and beyond the project area:</p> <ul style="list-style-type: none"> • All site employees will be advised of the hygiene measures. • All clearing, topsoil stripping and gravel cartage activities will be conducted under dry soil conditions. • Dust adhering to the sides of vehicles does not need to be removed. • All construction plant and machinery should be cleaned free of all soil and vegetative material prior to arrival and prior to departing the project site. • Clean down will comprise of the use of a brush and / or compressed air to remove clods of soil and / or soil water slurry. A metal bar or spade will be used to remove compacted soil where necessary. 	Contractor / Project Manager / Construction Manager	

ENVIRONMENTAL MANAGEMENT PLAN

Area of management	Timing	Management objective	Management Strategy	Responsibility	Whose advice
Dieback	Construction	Minimise the introduction and spread of soil pathogens	The vehicle and hygiene measures as per Weed Management above will ensure that no soil pathogens are transported to or from the project area or within the project area.	Contractor / Project Manager / Construction Manager	
Noise, Vibration and Dust	Construction	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 of works.	Contractor	Main Roads
			Works associated with the construction of the development should not prevent public access along the adjacent reserve. Public access should be maintained along the reserve at all times.	Contractor	Main Roads
			Any complaints regarding dust will be attended to as soon as possible utilising dust suppression techniques e.g. watering.	Contractor / Project Manager	Main Roads
			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.	Contractor	Main Roads
			Watering, the use of hydromulch or other forms of mulching to protect loose surfaces shall be used as mitigation measures, as required.	Contractor	Main Roads
Pollution and Litter	Construction	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.	Contractor	Main Roads

ENVIRONMENTAL MANAGEMENT PLAN

Area of management	Timing	Management objective	Management Strategy	Responsibility	Whose advice
Pollution and Litter (continued)	Construction	Ensure that the construction of the proposal is managed to a standard that minimises any adverse impacts on the environment.	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.	Contractor	Main Roads
			Dumping of bitumen, asphalt, concrete or aggregate should only occur at an authorised waste disposal site.	Contractor	Main Roads
			Temporary storage of bitumen, asphalt, concrete or aggregate should only occur at designated depots or controlled hardstands.	Contractor	Main Roads
			The project areas, including hardstand areas, will be kept in a tidy manner at all times.	Contractor	Main Roads
			All litter on the project will be placed into lidded bins and disposed of at an authorised waste disposal site.	Contractor	Main Roads
Fire	Construction	Ensure that the fire risk associated with the construction of the proposal is minimised.	No fires shall be lit within the project area.	Contractor	Main Roads
			Machinery will be fitted with approved spark arresting mufflers.	Contractor	Main Roads
			A water tanker and / or portable fire fighting unit will be on site at all times.	Contractor	Main Roads
			Comply with local authority fire management requirements.	Contractor	Main Roads
			All road plant and vehicles are to be fitted with fire extinguishers.	Contractor	Main Roads

ENVIRONMENTAL MANAGEMENT PLAN

Area of management	Timing	Management objective	Management Strategy	Responsibility	Whose advice
Aboriginal Heritage	Construction	Ensure that there is no unauthorised disturbance to Aboriginal heritage sites during construction.	If any materials of significance to Aboriginal people are discovered, works will immediately cease within 100 m of the material and the site examined by a qualified archaeologist.	Contractor	Main Roads
			The Department of Indigenous Affairs will be notified in the event of any significant Aboriginal Heritage discovery.	Contractor	Main Roads
			If skeletal material is uncovered during works then the WA Police Service will also be advised immediately.	Contractor	Main Roads
Site Management	Construction	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
			A formal induction program will be conducted for all personnel prior to their commencing work on the site. The program will aim to make personnel fully aware of all management strategies.	Contractor	Main Roads
Rehabilitation	Post-Construction	Leave the project area free from debris; and Rehabilitate the project area so that the revegetated area provides a net increase in area of native vegetation at the site.	Replace the cleared trees with locally occurring natives.	Contractor	Main Roads
			All waste materials from the development are to be completely removed from the site upon completion of the development. Final clean-up shall be to the satisfaction of the Project Manager and the Site Superintendent.	Contractor	Main Roads
			Suitable topsoil shall be respread evenly to a depth of at least 100 mm on fill embankment batters, verges and cut slopes on the section from where the material originated.	Contractor	Main Roads

9. REFERENCES

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Appendix A

Low Impact Environmental Screening Checklist

Checklist - Low Impact Environmental Screening

The Low Impact Environmental Screening Checklist is part of the environmental assessment and approval process, explained in Figure 2 and in the procedures. 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, i.e. that will have a low impact on the environment and that can be adequately managed through standard contract clauses.

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. Circle the relevant part of the item.

Project Name ALBANY – LAKE GRACE RD / FORMBY SOUTH RD INTERSECTION UPGRADE

ITEM NO.	ITEM	Y	N
1	New road or road reserve to be created or expansion of existing road reserve.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Works require ground disturbance or clearing of native vegetation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	New, or expansion of existing, pits or quarries. (non-commercial sources)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	Adjoining sensitive land use. eg residential or hospital or education centre	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Passes over, adjoins or drains directly into a wetland or sensitive watercourse.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6	Local natural drainage regime / hydrology will be changed.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7	Within/immediately adjacent to surface/underground Public Drinking Water Source Area.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	Dewatering, or a new water bore.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9	Known potential source of hazardous materials within or adjoining the road reserve. e.g. Acid Sulphate Soils, existing petrol station, industrial site or waste disposal site (landfill)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10	Buildings will require demolition.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

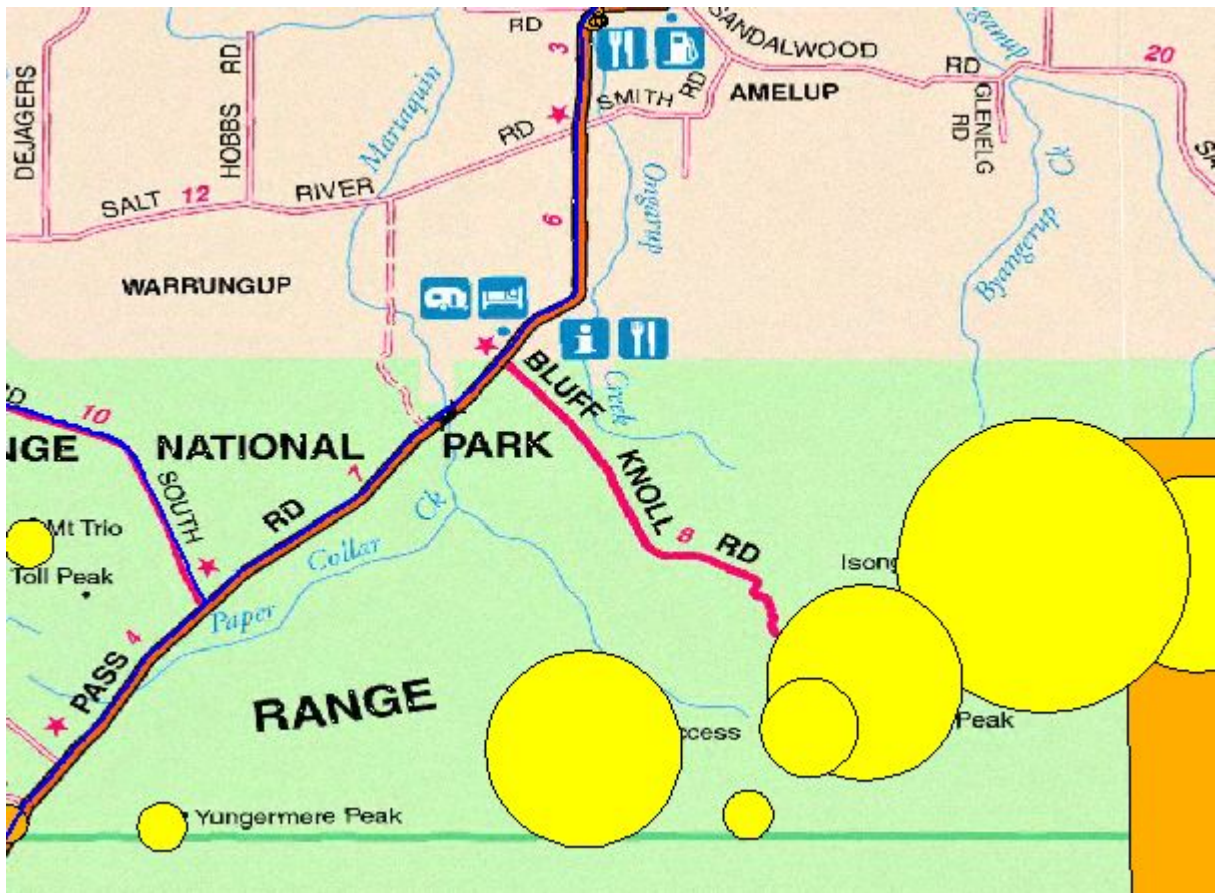
Completed By: Signature G. Hands Date 2/6/06
 Name GEOFF HANDS Title PROJECT MANAGER - MINOR WORK

To be reviewed by a Main Roads Environment Officer: Signature MPC Date 02/06/06
 Name Melissa Pionczyk-Kuk Title G. Environment Officer.

Comments:

Appendix B

Department of Conservation and Land Management's Threatened Flora and Fauna Database Searches



THREATENED ECOLOGICAL COMMUNITIES

Identified from MRWA IRIS database.

Legend: Yellow circles indicate areas of threatened ecological communities.

THREATENED FAUNA INFORMATION (Department of Conservation and Land Management)

Conditions In Respect Of Supply Of Information

- * All requests for data to be made in writing to the Executive Director, Department of Conservation and Land Management, Attention: Senior Zoologist, Wildlife Branch.
- * The data supplied may not be supplied to other organisations, nor be used for any purpose other than for the project for which they have been provided without the prior consent of the Executive Director, Department of Conservation and Land Management.
- * Specific locality information for Threatened Fauna is regarded as confidential, and should be treated as such by receiving organisations. Specific locality information for Threatened Fauna may not be used in reports without the written permission of the Executive Director, Department of Conservation and Land Management. Reports may only show generalised locations or, where necessary, show specific locations without identifying species. The Senior Zoologist is to be contacted for guidance on the presentation of Threatened Fauna information.
- * Receiving organisations should note that while every effort has been made to prevent errors and omissions in the data, they may be present. The Department of Conservation and Land Management accepts no responsibility for this.
- * Receiving organisations must also recognise that the database is subject to continual updating and amendment, and such considerations should be taken into account by the user.
- * It should be noted that the supplied data do not necessarily represent a comprehensive listing of the Threatened Fauna of the area in question. Its comprehensiveness is dependent of the amount of survey carried out within a specified area. The receiving organisation should employ a biologist/zoologist, if required, to undertake a survey of the area under consideration.
- Acknowledgment of the Department of Conservation and Land Management as the source of data is to be made in any published material. Copies of all such publications are to be forwarded to the Department of Conservation and Land Management, Attention; Senior Zoologist, Wildlife Branch.

34.3598 °S 118.136 °E / 34.3642 °S 118.139 °E

Albany - Lake Grace Rd & Formby South Rd intersection

*Date	Certainty Seen	Location Name	Method
-------	----------------	---------------	--------

Schedule 1 - Fauna that is rare or is likely to become extinct

Calyptorhynchus baudinii **Baudin's Black-Cockatoo** 0 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). Records in surrounding areas suggest that this species may occur in the area in question.

Calyptorhynchus latirostris **Carnaby's Black-Cockatoo** 0 records

This species moves around seasonally in flocks to feeding areas in proteaceous scrubs and heaths and eucalypt woodlands as well as pine plantations. Breeding occurs in winter / spring, mainly in the eastern forests and wheat belt where they can find mature hollow-bearing trees to nest in. Records in surrounding areas suggest that this species may occur in the area in question.

Schedule 4 - Other specially protected fauna

Falco peregrinus **Peregrine Falcon** 0 records

This species is uncommon and prefers areas with rocky ledges, cliffs, watercourses, open woodland or margins with cleared land. It could possibly occur in the area in question.

Priority One

0 records **Priority Two**

0 records

Priority Three

Calyptorhynchus banksii naso **Forest Red-tailed Black-Cockatoo** 0 records

This subspecies of the Red-tailed Black Cockatoo is restricted to the forests of the southwest. It requires tree hollows to nest and breed and is totally dependent on jarrah-marri forest. Records in surrounding areas suggest that this species may occur in the area in question.

Priority Four

Macropus irma **Western Brush Wallaby** 0 records

This species occurs in areas of forest and woodland supporting a dense shrub layer. Records in surrounding areas suggest that this species may occur in the area in question.

Friday, 12 December 2003

Department of Conservation and Land Management

34.3598 °S 118.136 °E / 34.3642 °S 118.139 °E

Albany - Lake Grace Rd & Formby South Rd intersection

<i>*Date</i>	<i>Certainty Seen</i>	<i>Location Name</i>	<i>Method</i>
		<i>Falcunculus frontatus leucogaster</i> Crested Shrike-tit (south-western ssp)	<i>0 records</i>
		This species is an uncommon inhabitant of woodlands. It may occur in the area in question.	
		<i>Hylacola cauta whitlocki</i> Shy Heathwren (western ssp)	<i>0 records</i>
		This species is an uncommon resident in mallee undergrowth. It could possibly occur in the area in question.	
		<i>Psophodes nigrogularis oregon</i> Western Whipbird (sthn WA subsp)	<i>0 records</i>
		This subspecies occurs from the Stirling Range east to Munglinup and north to Lake Grace and inhabits areas of mallee and heath, nesting in dense vegetation. Records in surrounding areas suggest that this species may occur in the area in question.	

*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

Flora survey of proposed clearing of extension to passing lane Chester Pass Road / Formby Road South intersection

E.M. Sandiford B.Sc. Hons
July 2006

The area of proposed clearing for the extension of road works* at the intersection of Chester Pass Road and Formby Road South was surveyed for plant species of high conservation value on 6/7/06.

FLORA

A list of native species recorded during the survey is provided in Appendix 2. A number of species could not be identified to species level due to absence of flowering material and it is likely annuals and geophytes are under represented due to the time of survey and dry season.

No Declared Rare Flora species were located during the survey or are known to occur within the survey area.

Three priority species – *Verticordia brevifolia* subsp *stirlingensis* P2, *Calothamnus affinis* P4 and *Chordifex isomorphus* P4 were found within the survey area. A fourth species – *Synaphea preissii* P3 may also be present. Specimens resembling this species were recorded and it has previously been recorded in the vicinity of the intersection, however positive identification requires mature flowers – absent at the time of survey.

Verticordia brevifolia subsp *stirlingensis* P2

Two plants were found occurring approximately 10 metres from the form edge along the eastern side of Chester Pass Road. Most populations of this species are found within the Stirling Ranges.

Calothamnus affinis P4. This species was present in low numbers within the survey area on the eastern side of Chester Pass Road. This shrub is endemic to the Stirling Ranges occurring on lateritic gravel soils on the lower slopes and valleys of the park

Chordifex isomorphus P4 was found scattered in low to moderate numbers throughout the survey area. This large rush has previously been recorded from two disjunct areas, growing in dry or wet sand and laterite from Mt. Barker, Stirling Ranges to Cheynes Beach and ironstone pavements in seasonally inundated areas in Scott River and Busselton areas.

Synaphea? preissii P3 See notes above

(See Appendix 1 for Conservation Codes).

VEGETATION

Most of the triangle of land on the northwest corner of the intersection has been previously cleared and regeneration is sparse – forming a Low Open to Open Shrubland over Very Open Sedgeland. Common species include *Acacia saligna*, *Grevillea crassifolia*, *Calothamnus sanguineus*, *Agonis theiformis*, *Acacia drummondii*, *Allocasuarina humilis*,

Kunzea recurva, *Beaufortia anisandra*, *Lomandra nutans*, *Mesomelaena stygia* and *Chordifex isomorphus* P4.

The vegetation the proposed passing lane and narrow strip of undisturbed bushland north west of the plaque is dominated by Jarrah Open Woodland over Tall Open Scrub or Open Heath over Low Shrubland and Open Sedgeland. The density and floristics of the understorey varies slightly according to soils present. Subdominant trees include *Corymbia calophylla*, *Eucalyptus decipiens* and *Eucalyptus ?decurva*. Common shrubs include *Hakea ambigua*, *Hakea trifurcata*, *Hakea undulata*, *Beaufortia anisandra*, *Beaufortia schaueri*, *Taxandria spathulata*, *Agonis theiformis*, *Gastrolobium retusum*, *Calothamnus sanguineus*, *Leucopogon gibbosus*, *Dryandra armata*, *Verticordia habrantha*, *Dryandra brownii* and *Acacia baxteri*. Common sedges and rushes include *Tetraria octandra*, *Tetraria capillaris*, *Anarthria gracilis*, *Desmocladus fasciculatus*, *Mesomelaena tetragona*, *Lepidosperma species* and *Chordifex isomorphus* P4.

*The extension of road works includes an equilateral triangle of land on the north west side of the Formby Road South/Chester Pass Road intersection extending to 2m behind the plaque, and an extension of a passing lane to 860 m south of the intersection of the eastern side of Chester Pass Rd., extending 14 m from the formed road edge.

REFERENCES

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- Thomson, C, G. Hall, G. Friend (1993) Mountains of Mystery, A Natural History of the Stirling Range. Dept CALM

APPENDIX 1 - Conservation Codes For Western Australia

R: Declared Rare Flora - Extant Taxa (= Threatened Flora = Endangered + Vulnerable).

Taxa which have been adequately searched for and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Threatened Species Scientific Committee.

X: Declared Rare Flora - Presumed Extinct Taxa.

Taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known populations have been destroyed more recently, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Threatened Species Scientific Committee.

1: Priority One - Poorly Known Taxa

Taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as "rare flora", but are in urgent need of further survey.

2: Priority Two – Poorly Known Taxa

Taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as "rare flora" but are in urgent need of further survey.

3: Priority Three – Poorly Known Taxa

Taxa which are known from several populations at least some of which are not believed to be under immediate threat, (i.e. not currently endangered). Such taxa are under consideration for declaration as "rare flora" but are in need of further survey.

4: Priority Four – Rare Taxa

Taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5 - 10 years.

APPENDIX 2 - SPECIES LIST

Proposed clearing, extension Formby South Road / Chester Pass Road intersection

MONOCOTYLEDONS

ANTERICACEAE

Agrostocrinum hirsutum
Chamaescilla corymbosa
Tricoryne humilis

CYPERACEAE

Cyathochaeta avenacea
Lepidosperma
leptostachyum
Lepidosperma
squamatum
Lepidosperma tenue
Lepidosperma sp.
Mesomelaena stygia
Mesomelaena tetragona
Schoenus caespitius
Schoenus obtusifolia
Schoenus pleistemonus
Schoenus sublateralis
Tetraria capillaris
Tetraria octandra

DASYPOGONACEAE

Calectasia grandiflora
Kingia australis
Lomandra nigricans
Lomandra nutans
Lomandra sericea

HAEMODORACEAE

Conostylis setigera

IRIDACEAE

Patersonia limbata
Patersonia pygmaea

ORCHIDACEAE

Caladenia sp.
Elythranthera brunonis
Eriochilus sp.
*Disa bracteata
Lyperanthus serratus
Pterostylis vittata

POACEAE

Amphipogon sp
Austrodanthonia sp.
Neurachne alopecuroidea

RESTIONACEAE

Anarthria gracilis
Chordifex isomorphus P4
Chordifex laxus
Desmocladus fasciculatus
Harperia lateriflora
Loxocarya striata

XANTHORHOEACEAE

Xanthorrhoea platyphylla

DICOTYLEDONS

APIACEAE

Xanthosia huegelii
Xanthosia singuliflora

ASTERACEAE

Lagenophora huegelii
Pterocarpa paniculata

CASUARINACEAE

Allocasuarina humilis
Allocasuarina thuyoides
Allocasuarina
microstachya
Casuarina obesa

DILLENEACEAE

Hibbertia amplexicaulis
Hibbertia lineata

DROSERACEAE

Drosera erythrorhiza
Drosera menziesii

EPACRIDACEAE

Astroloma epacridis
Astroloma pallidum
Astroloma tectum
Leucopogon australis
subsp acutifolius
Leucopogon gibbosus
Leucopogon ovalifolius
Leucopogon oxycedrus
Leucopogon sp.
Lysinema ciliatum

EUPHORBIACEAE

Pseudanthus virgatus

GOODENIACEAE

Dampiera alata
Dampiera sacculata
Goodenia caerulea

LAMIACEAE

Hemigenia humilis
Hemigenia pritzelii

LAURACEAE

Cassytha glabella

LORANTHACEAE

Nuytsia floribunda

MIMOSACEAE

Acacia aemula
subsp muricata
Acacia baxteri
Acacia browniana
Acacia chrysocephala
Acacia drummondii
Acacia pulchella
Acacia saligna

MYRTACEAE

Agonis theiformis
Astartea sp.
Beaufortia anisandra
Beaufortia schaueri
Calothamnus affinis P4
Calothamnus sanguineus
Corymbia calophylla
Darwinia vestita
Eucalyptus decipiens
Eucalyptus ?decurva
Eucalyptus marginata
Kunzea micrantha
Kunzea recurva
Leptospermum oligandrum
Melaleuca acuminata
Melaleuca thymoides
Melaleuca tuberculata
Pericalymma sp
Taxandria parviceps
Taxandria spathulata
Verticordia brevifolia
subsp stirlingensis P2
Verticordia habrantha

PAPILIONACEAE

Chorizema aciculare
Daviesia alternifolia
Gastrolobium retusum
Gompholobium
burtonioides
Gompholobium
knightianum
Hovea chorizemifolia
Jacksonia alata
Pultenaea verruculosa

PITTOSPORACEAE

Billardiera fusiformis
Billardiera sp

POLYGALACEAE

Comesperma virgatum

PROTEACEAE

Banksia gardneri
Banksia sphaerocarpa
Dryandra arctotidis
Dryandra armata
Dryandra blechnifolia
Dryandra brownii
Dryandra drummondii
Dryandra sessilis
Grevillea crassifolia
Hakea ambigua
Hakea ceratophylla
Hakea corymbosa
Hakea cucullata
Hakea lissocarpha
Hakea prostrata
Hakea ruscifolia
Hakea trifurcata
Hakea undulata
Persoonia striata
Petrophile squamata
Petrophile sp.
Stirlingia tenuifolia
Synaphea petiolaris
Synaphea ?preissii P 3

RHAMNACEAE

Cryptandra arbutifolia
var intermedia
Cryptandra myriantha
Cryptandra nutans
Trymalium ledifolium

RUBIACEAE

Opercularia vaginata

RUTACEAE

Boronia crassifolia
Boronia spathulata
Boronia subsessilis

SANTALACEAE

Leptomeria
cunninghamii

STERCULIACEAE

Thomasia foliosa

STYDIACEAE

Stylidium amoenum
Stylidium carnosum
Stylidium piliferum
Stylidium tenue

THYMELAEACEAE

Pimelea lehmanniana
subsp lehmanniana
Pimelea ?longiflora

Bold = Priority species

Appendix C

Australian Heritage Places Inventory, Heritage Council of Western Australia and the Municipal Heritage Inventory Database Searches

The screenshot shows a Microsoft Internet Explorer browser window displaying the search results page for the Heritage Council of Western Australia. The browser's address bar shows the URL http://register.heritage.wa.gov.au/search_results.html. The website header is dark red with the text "HERITAGE COUNCIL OF WESTERN AUSTRALIA" and navigation links for "HERITAGE COUNCIL", "PLACE REGISTER", and "HERITAGE TRAILS". A secondary navigation bar includes links for "HELP", "MEDIA", "NEWS HIGHLIGHTS", "LINKS", and "FAQS". Below the header, a horizontal menu lists various site sections: "ABOUT US", "DEVELOPMENT", "INSURANCE", "ASSISTANCE", "PUBLICATIONS", "CASE STUDIES", "EDUCATION", and "COMMUNITY".

The main content area displays "Displaying results: [1-5] of 5". On the left, there is a sidebar with links for "QUICK SEARCH", "ADVANCED SEARCH", "RESULTS LIST", "LOCATION REPORT", "SAVE DATA", "WHAT IS THE STATE REGISTER", and "OTHER HERITAGE LISTS".

The search results are presented in a table with the following entries:

hide selected hide unselected	
<input type="checkbox"/>	Moana Homestead & Woolshed (6001) <i>Chester Pass Rd, Borden</i>
<input type="checkbox"/>	Salt River Hall (1108) <i>Chester Pass Rd, South Borden</i>
<input type="checkbox"/>	Salt River School Site (6023) <i>Chester Pass Rd, South Borden</i>
<input type="checkbox"/>	The Lily (6050) <i>Chester Pass Rd, Arnekeup</i>
<input type="checkbox"/>	Yardup Cottage (6051) <i>Chester Pass Rd, South Borden</i>

Below the table, there are "hide selected | hide unselected" controls and a "HELP" button. At the bottom of the page, there are links for "top of page", "disclaimer", and "copyright 2004 heritage council of western australia". The Windows taskbar at the bottom shows the Start button, several open applications (Inbox - Mi..., F:\Minor P..., PEIA EIA ..., PEIA EIA ..., Welcom...), and the system tray with the time 12:07 PM.

Welcome to the Heritage Council of Western Australia - Microsoft Internet Explorer provided by MRWA ...

File Edit View Favorites Tools Help

Back Forward Stop Search Favorites

Address http://register.heritage.wa.gov.au/search_results.html

HERITAGE COUNCIL OF WESTERN AUSTRALIA

HERITAGE COUNCIL | **PLACES DATABASE** | HERITAGE TRAILS | HELP | MEDIA | NEWS HIGHLIGHTS | LINKS | FAQs | CONTACT US

| ABOUT US | DEVELOPMENT | INSURANCE | ASSISTANCE | PUBLICATIONS | CASE STUDIES | EDUCATION | COMMUNITY |

Search this site

QUICK SEARCH
 ADVANCED SEARCH
 RESULTS LIST
 LOCATION REPORT
 SAVE DATA

WHAT IS THE STATE REGISTER
 OTHER HERITAGE LISTS

Displaying results: [1-1] of 1

<input type="checkbox"/>	hide selected hide unselected	Formby Siding (5080) <i>Formby South Rd, Gnowangerup</i>	HELP
	hide selected hide unselected		HELP

[top of page](#) | [disclaimer](#) | © copyright 2006 heritage council of western australia

Start | Internet | 2:47 PM

Department of Indigenous Affairs Database Search



DEPARTMENT OF INDIGENOUS AFFAIRS

Register of Aboriginal Sites

Page 1
RPGSR V1.57
Reference No: IQ-RPGSR-5168

Report run on November 20, 2003 12:00 PM

Selection Criteria	Legend
Site Search within specified polygon Coordinates Type: MGA Coordinates - MGA Zone: 50 Coordinates: Easting: 6035500 Northing: 61965300 Easting: 6048000 Northing: 6197800 Easting: 6056000 Northing: 6197100 Easting: 6042000 Northing: 6195700	Status I Interim Register P Permanent Register S Stored Data Restriction F Female Access Only M Male Access Only N No Gender Restrictions Access C Closed O Open V Vulnerable Reliability R Reliable U Unreliable Site Types C Ceremonial RP Repository / cache S Man-Made Structure T Modified Tree E Engraving ART Artefacts / Scatter HIST Historical M Mythological BUR Skeletal material/Burial F Fish Trap P Painting Q Quarry MD Midden / Scatter G Grinding patches / grooves

Map coordinates (Latitude / Easting & Longitude / Northing) are based on the GDA94 datum. Coordinates are indicative locations and may not necessarily represent the true centre of sites, especially if access to specific site information is tagged as "Closed" or "Vulnerable". The metric grid on Site Search Maps are for a specific MGA zone, and does not cater for MGA metric coordinates for a different MGA zone.

Site Id	Status	Access	Restriction	Reliability	Site Type	Latitude/ Easting	Longitude/ Northing	Site Name	Informants	Site No
No Sites Found within selection area.										

WESTERN AUSTRALIA

Aboriginal Sites Register

Site Search Overview Ma

Page 2

Sites may exist that are not yet entered into the Register system, or are on the Register and no longer exist. The Aboriginal Heritage Act 1972 provides a process for Aboriginal sites to be added to the Register. Aboriginal communities is required to identify any additional sites that may exist.

Copyright for Aboriginal Sites information shall at all times remain the property of the State of Western Australia, under custodianship of the Dept of Indigenous Affairs / Aboriginal Cultural Material Committee. 1999 all rights reserved.

Copyright for base map information shall at all times remain the property of the Commonwealth of Australia, Geoscience Australia - National Mapping Division. 2002 all rights reserved.

Copyright for Native Title Land Claim and Local Government Authority boundaries shall at all times remain the property of the State of Western Australia, Dept of Land Administration. 2002 all rights reserved.

Copyright for Mining Tenement boundaries shall at all times remain the property of the State of Western Australia, Dept of Minerals and Petroleum Resources. 2002 all rights reserved.

Legend

Selection Area
(User Polygon, LGA,
Land Claim, ...)



Site Search Map



Selected Sites

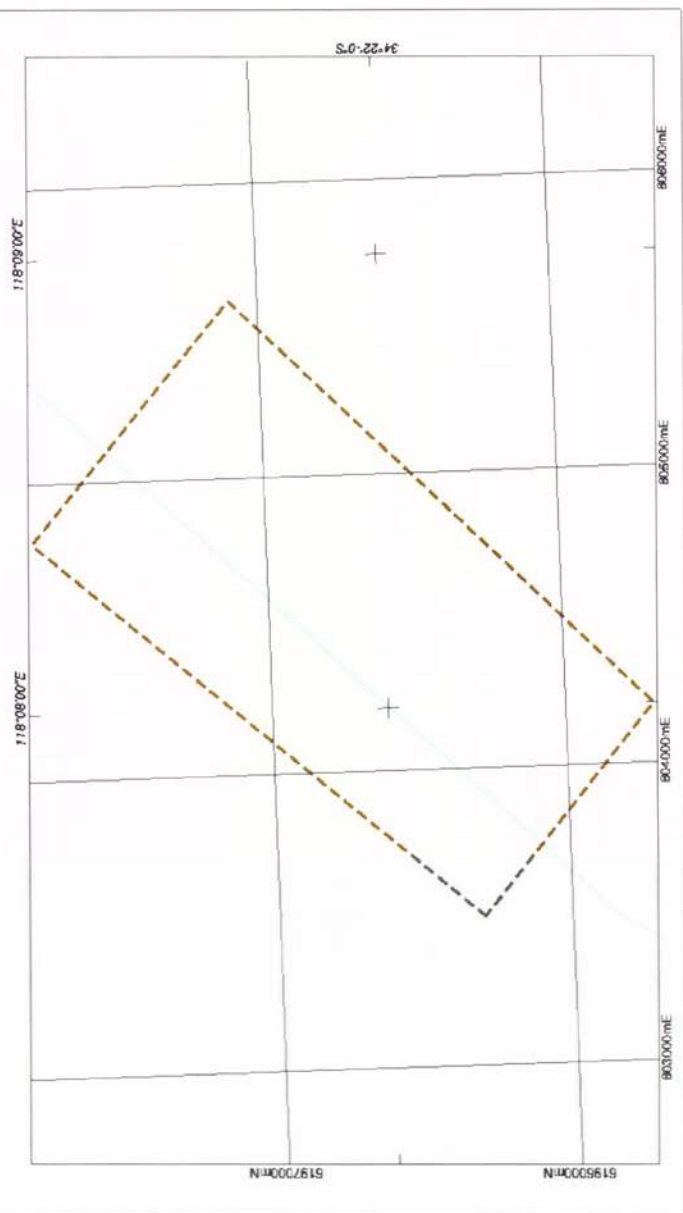


DEPARTMENT OF INDIGENOUS AFFAIRS



Geographical Coordinates
Projection: Lambert
Datum: GDA94

Site Search Map



From: Anthony Galante [mailto:Anthony.Galante@dia.wa.gov.au]
Sent: Thursday, July 22 2004 2:00 PM
To: HANDS Geoffrey (SCCR)
Cc: STEVENS Ron (SPM)
Subject: RE: NATIVE TITLE CLAIMANTS AND DIA ENDORSEMENT TO PROCEED WITH ROAD WORKS

Geoff/Ron

The following are the names of families with ties to Borden/Jerramungup and Bluff Knoll:

Borden

Family	Representative	Contact Details
Williams	Sam Williams	9842 3820 / 9842 8008
Roberts/Brown	Eric Brown	9842 3312
Penny	Kelvin Penny	11 Lindfield Crescent, Albany 6330
Eades	Members of the Eades family previously consulted	
Woods	Members of the Woods family previously consulted	

Bluff Knoll Road

Family	Representative	Contact Details
Hayward	Verdun Hayward	9827 1512
Williams	Sam Williams	9842 3820 / 9842 8008
Penny	Kelvin Penny	11 Lindfield Crescent, Albany 6330
Roberts/Brown	Robert Minitier	9827 1433
Bolton	James Bolton	Whitehead Road, Gnowangerup
Eades	Members of the Eades family previously consulted	
Woods	Members of the Woods family previously consulted	

Regards Anthony

-----Original Message-----

From: HANDS Geoffrey (SCCR) [mailto:geoffrey.hands@mainroads.wa.gov.au]
Sent: Wednesday, 14 July 2004 1:36 PM
To: Anthony Galante
Cc: STEVENS Ron (SPM)
Subject: RE: NATIVE TITLE CLAIMANTS AND DIA ENDORSEMENT TO PROCEED WITH ROAD WORKS

Anthony,

Ron Stevens and I would like to set up a meeting with yourself to establish a protocol for dealing with this matter. Could you please advise a suitable date and time. My phone number is 9892 0552.

Thanks and Regards

Geoff Hands
PM Minor Works
Main Roads Western Australia
Great Southern Region
Chester Pass Rd, Albany

-----Original Message-----

From: Anthony Galante [mailto:Anthony.Galante@dia.wa.gov.au]
Sent: Monday, May 17 2004 4:44 PM
To: HANDS Geoffrey (SCCR)
Cc: Stephen Loo; Robert Reynolds

Subject: FW: NATIVE TITLE CLAIMANTS AND DIA ENDORSEMENT TO PROCEED WITH ROAD WORKS

Dear Geoffrey

I have investigated the matter of recent site clearance consultations undertaken by Main Roads offer the following feedback:

1. The informants represent essentially one major family (Eades) rather than a representative spectrum of relevant Indigenous people. There seems to be a lack of representativeness and an absence of equity in terms of other families that could have been included. Other relevant informants include the following families: Roberts; Miniter; Bolton; Loo; Coyne; Knapp; Williams; Colbung inter alia.
2. I would recommend that in addition to SWALSC future anthropological consultants are directed to liaise with the Department of Indigenous Affairs, Southern Region, prior to the consultations taking place to ensure that all appropriate informants are included. I would hope this will mitigate against these difficulties in the future.
3. DIA cannot give endorsement for these works to proceed and it is recommended that further consultation take place.

Should you have queries, please contact me.

Anthony Galante
Regional Manager, Southern Region
Department of Indigenous Affairs
129 Aberdeen St
ALBANY WA 6330
PO Box 5091 ALBANY WA 6330
Tel (08) 9842 3347
Fax (08) 9842 3517
Email: Anthony.Galante@dia.wa.gov.au
Mobile: 0407 192 095

<<http://www.dia.wa.gov.au>>

We invite you to provide feedback on how you found our service. Click below.
<<http://www.dia.wa.gov.au/Feedback/default.aspx>>

-----Original Message-----

From: Rose Butler
Sent: Thursday, 22 April 2004 11:05 AM
To: Anthony Galante
Subject: FW: NATIVE TITLE CLAIMANTS AND DIA ENDORSEMENT TO PROCEED WITH ROAD WORKS

I have advised Geoff that there is an issue and that this office may not be able to endorse the development with the group that have been consulted with and that I have referred the matter to you. If you need any info on who should be consulted, Sam will assist. I hope this is OK.

Regards

Rose

-----Original Message-----

From: HANDS Geoffrey (SCCR) [mailto:geoffrey.hands@mainroads.wa.gov.au]
Sent: Wednesday, 21 April 2004 4:58 PM
To: Rose Butler
Cc: STEVENS Ron (SPM)
Subject: NATIVE TITLE CLAIMANTS AND DIA ENDORSEMENT TO PROCEED WITH ROAD WORKS

Rose,

As per our telephone conversation, I advise that Main Roads intend to construct traffic "passing bulges" / right turn auxiliary lanes on the following intersections, next financial year.

For both of below intersections:

* South Coast Highway / Bremer Bay Rd incorporating Borden - Boxwood Hill Rd.

* South Coast Highway / Gairdner South Road in the Shire of Jerramungup.

The names of the Native Title claimants consulted are:

1. Deana Eades
2. Aden Eades (Jnr)
3. Errol Eades
4. William Woods
5. Lee - Anne Woods
6. Gillian Woods

and for below intersection:

* Albany - Lake Grace Rd / Bluff Knoll Road in the Shire of Gnowangerup (Stirling Range National Park).

The names of the Native Title claimants consulted are:

1. Aden Eades (Snr)
2. Aden Eades (Jnr)
3. Errol Eades
4. William Woods
5. Lee - Anne Woods
6. Kirsty Eades

Main Roads wrote a letter, dated 24 March 2004, to your office seeking endorsement from DIA to proceed with the proposed works, due to there being no known sites or ethnographic issues within the project areas and received a letter from Stephen Loo (DIA - Perth) on 21 April 2004 advising that Main Roads seems to have taken all necessary precautions and steps to ensure that no Aboriginal sites or sites of significance are within the proposed road works. The letter also requested Main Roads contact your Regional Manager for further consideration and approvals for the road works. Whilst Stephen Loo has acknowledged that due process has been followed, DIA did not give Main Roads formal endorsement. Can you therefore please provide Main Roads with this endorsement.

If you have any concerns relating to providing this endorsement please contact our Acting Regional Manager Ron Stevens on 9892 0521 or myself on 9892 0552.

Regards
Geoff Hands
PM Minor Works

The information contained in this email, including any attachments, may contain confidential information. If you are not the intended recipient, any use, disclosure or copying of this information is unauthorised. If you have received this email in error, please notify the sender immediately by return email, and then delete it from your system.



ABN: 50 860 676 021

I SAM WILLIAMS have been consulted in regards to the proposed Main Roads WA works at the junction of the Albany – Lake Grace (Chester Pass Rd) and Formby South Road within the Shire of Gnowangerup and I am satisfied that no disturbance will take place to Aboriginal heritage sites or sites of significance.


Signature

26/11/03
Date

Comments:

No objection to works going ahead
.....
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.....
.....
.....
.....

COPY



ABN: 50 860 676 021

I Verdun Hayward have been consulted in regards to the proposed Main Roads WA works at the junction of the Albany – Lake Grace (Chester Pass Rd) and Formby South Road within the Shire of Gnowangerup and I am satisfied that no disturbance will take place to Aboriginal heritage sites or sites of significance.

Verdun Hayward
Signature

26/11/03
Date

Comments:

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.....

COPY



ABN: 50 860 676 021

I ADEN C. EADES have been consulted in regards to the proposed Main Roads WA works at the junction of the Albany – Lake Grace (Chester Pass Rd) and Formby South Road within the Shire of Gnowangerup and I am satisfied that no disturbance will take place to Aboriginal heritage sites or sites of significance.

Aden C. Eades

Signature

26/11/03

Date

Comments:

Should any thing of Aboriginal significance be unearthed, stop work and notify str. 11.

COPY



I DALLAS COYNE have been consulted in regards to the proposed Main Roads WA works at the junction of the Albany – Lake Grace (Chester Pass Rd) and Formby South Road within the Shire of Gnowangerup and I am satisfied that no disturbance will take place to Aboriginal heritage sites or sites of significance.


Signature

26/11/2003.
Date

Comments:

Nil, but would like to be consulted
if anything is unearthed during clearances
.....
.....
.....
.....

COPY



ABN: 50 860 676 021

I ERROL ENDES have been consulted in regards to the proposed Main Roads WA works at the junction of the Albany – Lake Grace (Chester Pass Rd) and Formby South Road within the Shire of Gnowangerup and I am satisfied that no disturbance will take place to Aboriginal heritage sites or sites of significance.

Errol Ende
Signature

26/11/03
Date

Comments:

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COPY



ABN: 50 860 676 021

I William West have been consulted in regards to the proposed Main Roads WA works at the junction of the Albany – Lake Grace (Chester Pass Rd) and Formby South Road within the Shire of Gnowangerup and I am satisfied that no disturbance will take place to Aboriginal heritage sites or sites of significance.

William
Signature

26/11/03
Date

Comments:

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COPY

Appendix E

DEC's Sensitive Water Resources Database Search

http://apostle.environment.wa.gov.au - Department of Environment - Native Vegetation - Microsoft Internet Explorer provided by

Department of Environment
Native Vegetation Map Viewer

Welcome Search Metadata Help

Welcome

Welcome to the Native Vegetation Map Viewer. This site helps you to identify the following:

- The location of environmentally sensitive areas, as declared by a Notice under section 51B of the Environmental Protection Act 1986.
- Areas where low impact mineral and petroleum activities can NOT occur, as defined under Schedule 1 of the Environmental Protection (Clearing of Native Vegetation) Regulations 2004.

Click on the links below for more information on:

- [Environmentally Sensitive Areas](#)
- [Low Impact Mineral and Petroleum Activities](#)
- [Native Vegetation Disclaimer](#)

Click [here](#) for a quick tutorial on using the Native Vegetation Protection map viewer.

Policy & Legislation | Clearing Permits | Public Reports
DoE Home | Contacts | Copyright | Disclaimer

Zoom out tool. Click and drag a rectangle.

Start | Internet | 1:44 PM

Appendix F

Assessment against the DEC's 10 Clearing Principles

This guideline has been prepared to assist MRWA in addressing condition 7 "Assessment of Clearing Impacts" under Clearing Permit CPS 818/2.

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

10. AREA UNDER ASSESSMENT DETAILS

10.1 Proponent details

Proponent's name:	MRWA	Great Southern Region
Contacts	Name:	Andrew Duffield
:	Phone:	08 9892 0555
	Fax:	
	Email:	

10.2 Property details

Property:	Albany – Lake Grace Road intersection with Formby South Road, Stirling Range National Park, Shire of Gnowangerup
Colloquial name:	

10.3 Area under assessment

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:	Site Plan Attached
0.6254ha		Mechanical	Road construction/intersection on upgrade	<input type="checkbox"/> Yes

10.4 Avoidance/Minimise clearing

How have the clearing impacts been minimised?
Intersection design modified several times to reduce clearing footprint

11. BACKGROUND

11.1 Existing environment and information

11.1.1 Description of the native vegetation under application

(suggestion: To determine Vegetation Condition use - Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.)

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

Vegetation Complex	Clearing Description	Vegetation Condition	Comment
	Vegetation under application is to be cleared in order to upgrade the intersection of Albany – Lake Grace and Formby South Rds	Good; vegetation structure significantly altered; basic structure or ability to regenerate it. Excellent; vegetation structure intact;(Keighery, 1994).	LHS area of road in good condition; RHS area of road in excellent condition (Sandiford, 2006, pers comm.)

12. 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
	The vegetation to be cleared is of good to excellent condition, and is considered to be of high biological diversity (Sandiford 2006). There is a large amount of similar vegetation in the Stirling Range National Park (115000ha); therefore removal of this vegetation is unlikely to be significant on either a local or Bioregional level due to the small area concerned.

(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

CALM (DEC) advice is that 3 Declared and 5 Priority listed fauna species occur within 10km of the project area. Given the small amount of clearing required for the project and the large area of vegetation surrounding the site it is considered unlikely that any Declared or Priority fauna will be impacted, or that the habitat could be considered "significant" in a local context.

Methodology CALM (2003)

(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 known Declared Rare Flora (DRF) occurs within the project site. The Vegetation and Flora Survey found no DRF, and found three (possibly four) Priority species. Given the relatively small area of clearing surrounded by the large National Park, it is considered that the proposal is not likely to be at variance to this proposal.

Methodology Sandiford (2006) DEC (2006) Site visit (2006)

(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 at variance to this Principle

A number of Threatened Ecological Communities exist within the Stirling Range National Park; however, no Threatened Ecological Communities were identified within or in the vicinity of the project area during the biological survey.

Methodology Sandiford (2006), CALM advice, ESA search (DEH 2006).

(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 at variance to this Principle

Vegetation association number 980 occurs in the project site. Its pre-European distribution is 121431ha, current distribution of 80012ha, giving a percentage remaining of 65.9%. This is above the EPA's threshold of 30%. Therefore, this project will not be at variance to this Principle.

Methodology EPA Position Statement no. 2, Shepard et al (2001)

(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

There are no watercourses or wetlands within the vicinity of the project area. A floodway exists approximately 10km to the north along Albany – Lake Grace Rd, which is not expected to be impacted by the proposed works. Existing drainage and surface run-off patterns will be maintained. Removal of the small amount of vegetation associated with these works is unlikely to be significant.

Methodology Site visit 2006.

(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 area under application is very small and surrounded by large areas of remnant vegetation within the Stirling Range National Park. There is unlikely to be any land degradation issues associated with this project due to its small scale and surrounding vegetation.

Methodology Site visit 2006

(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**
Although the works occur within the Stirling Range National Park, the clearing associated with them is minimal in the context of the Park (ie less than 0.01%). Therefore, the proposal is unlikely to be at variance to this Principle.

Methodology Site visit 2006

(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**
Due to the small nature and scale of the vegetation under application, and the large areas of surrounding remnant vegetation, it is considered unlikely that this proposal is at variance to this Principle.

Methodology Site visit 2006

(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**
Due to the small nature and scale of the vegetation under application, and the large areas of surrounding remnant vegetation, it is considered unlikely that this proposal is at variance to this Principle.

Methodology Site visit 2006

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

Comments N/A

Methodology

13. SUBMISSIONS

If required have submissions been requested and addressed

Submission Requested from	Request Sent (Date)	Submission Received (Date)	Issues Raised / Comments Made
---------------------------	---------------------	----------------------------	-------------------------------

14. ASSESSOR'S RECOMMENDATIONS

List of Principles seriously at variance, at variance or maybe at variance	Recommendation (does this clearing require a Revegetation Management Plan / Offset Proposal / Environmental Management Plan / Management Strategy/New Application, under CPS 818/2)
--	---

15. REFERENCES

OFFICER PREPARING REPORT

Melissa Piowczyk-Kruk
____Graduate Environment
Officer_____
Great Southern Regional Office

MRWA
08 9892 0567

30/10/06

Further advice from DEC to support assessment

From: Barrett, Sarah [mailto:Sarah.Barrett@dec.wa.gov.au]

Sent: Friday, 8 December 2006 2:27 PM

To: PIOWCZYK-KRUK Melissa (GEnv)

Subject: RE: Chester Pass Rd project

Melissa

I cannot find Sarah Comer's e-mail but from I can re-iterate (in Sarah's absence) that she had no concerns re the proposal from a fauna perspective

Regards

Sarah Barrett

Appendix G

WAPC's Acid Sulfate Soils Mapping



ACID SULFATE SOILS

APPLICANT SELF - ASSESSMENT FORM

PLEASE COMPLETE THIS SELF-ASSESSMENT FORM AND ANSWER THE FOLLOWING:

STEP 1:

IS THERE EVIDENCE OF A SIGNIFICANT RISK OF DISTURBING ACID SULFATE SOILS AT THIS LOCATION?

Question 1:

Is the land depicted in Figures 1 - 11 of the Western Australian Planning Commission's Planning Bulletin No. 64: Acid Sulfate Soils as having a 'high risk of Actual Acid Sulfate Soil (AASS) & Potential Acid Sulfate Soil (PASS) < 3m from surface'?

Note: Planning Bulletin No. 64: Acid Sulfate Soils can be downloaded from:
<http://www.wapc.wa.gov.au/publications/policies/bulletins/PB64/64Nov03.html>

TICK BOX AS APPROPRIATE: YES NO

Question 2:

Is the land located in an area, whether depicted in Figures 1 - 10 or not, where site characteristics and local knowledge lead you to form the view that there is a significant risk of disturbing acid sulfate soils at this location?

TICK BOX AS APPROPRIATE: YES NO

If YES to either of these two questions go to Step 2.

If NO to both of these questions no further investigation is required. Sign this form and submit it with your application.

STEP 2: ARE ANY OF THE FOLLOWING WORKS PROPOSED, OR LIKELY TO BE CARRIED OUT, ON THE LAND?

Question 3:

Are any dewatering works proposed to be undertaken?

TICK BOX AS APPROPRIATE: YES NO

Question 4:

Is the surface elevation \leq 5m AHD and is excavation of $\geq 100\text{m}^3$ of soil (i.e. 10 standard dump truck loads) proposed?

TICK BOX AS APPROPRIATE: YES NO

Question 5:

Is the surface elevation $>$ 5m AHD and is excavation of $\geq 100\text{m}^3$ of soil (i.e. 10 standard dump truck loads) with an excavation depth of $\geq 2\text{m}$ proposed?

TICK BOX AS APPROPRIATE: YES NO

If YES to any of these three questions go to Step 3.

If NO to all of these questions no further investigation is required. Sign this form and submit it with your application.

STEP 3: CARRY OUT PRELIMINARY SITE ASSESSMENT IN ACCORDANCE WITH DEPARTMENT OF ENVIRONMENT GUIDELINES.

Note: Copies of documents in the Acid Sulfate Soils Guidelines Series and further technical advice and information can be obtained from the Contaminated Sites page on the Department of Environment's website at <http://www.environment.wa.gov.au/contaminatedsites>.

Question 6:

Did the Preliminary Site Assessment reveal the presence of acid sulfate soils?

TICK BOX AS APPROPRIATE: YES NO

If YES to this question go to Step 4.

If NO to this question then no further investigation is required. Sign this form and submit it with your application together with the written results of the Preliminary Site Assessment.

STEP 4:

CARRY OUT DETAILED SITE ASSESSMENT IN ACCORDANCE WITH DEPARTMENT OF ENVIRONMENT GUIDELINES.

Question 7:

Did the Detailed Site Assessment reveal the presence of acid sulfate soils?



TICK BOX AS APPROPRIATE:

YES

NO

If YES to this question you should consider modifying the design of the proposal to ensure that there is no disturbance to acid sulfate soils at this location. Regardless of whether you modify the design or not, sign this form and submit it with your application together with the written results of the Preliminary and Detailed Site Assessments.

If NO to this question then no further investigation or work is required. Sign this form and submit it with your application together with the written results of the Preliminary and Detailed Site Assessments.

APPLICANT SIGNATURE:



.....
Full Name



.....
Signature



.....
Date

TICK BOX FOR ATTACHMENTS AS APPROPRIATE:

Preliminary site Assessment Results

Detailed site Assessment Results

The proposal has been designed to avoid disturbance of Acid Sulfate Soils at this location

Appendix H

Department of Agriculture Advice on Declared Weeds

From: Devenish, Keith [mailto:KDevenish@agric.wa.gov.au]
Sent: Monday, March 29 2004 1:24 PM
To: STEVENS Ron (SPM)
Cc: Parry, Colin
Subject: RE: Environmental Assessments - 2004/05 Network Safety and Improvement Program

Hi Ron,

I spoke today with Wayne Ledger our biosecurity officer and there are no problems from our perspective associated with widening the road on Chester Road in Gnowangerup shire and Hassell highway in Jerramungup shire

Keith Devenish
District Manager
Department of Agriculture
PO Box 98
JERRAMUNGUP WA 6337
(08) 9835 1177
kdevenish@agric.wa.gov.au

From: Parry, Colin
Sent: Wednesday, 24 March 2004 10:16 AM
To: Ledger, Wayne; Devenish, Keith
Cc: Knight, Ted
Subject: FW: Environmental Assessments - 2004/05 Network Safety and Improvement Program

Wayne and Keith,

This request for information on weed risk under environmental assessment for road-works relates to areas in Jerry and I think Gnowangerup shires. Please liaise direct with Ron Stevens of MRD. Phone contacts and email address below.

Kind regards

Col Parry
Senior Protection Officer
Project Manager-Animal Pests SAR
ph.(08) 98928 465 fax.(08) 98412 707
cparry@agric.wa.gov.au

-----Original Message-----

From: STEVENS Ron (SPM) [mailto:ron.stevens@mainroads.wa.gov.au]
Sent: Wednesday, 24 March 2004 10:05 AM
To: cparry@agric.wa.gov.au
Subject: Environmental Assessments - 2004/05 Network Safety and Improvement Program

Col,

As discussed Main Roads has commenced planning work for three small projects in the above program. Details of the three project are as follows:

- * Albany-Lake Grace Road (Chester Pass Rd) and Bluff Knoll Road Junction
- * South Coast Highway (Hassell Hwy) and Gairdner South Road Junction
- * South Coast Highway (Hassell Hwy) and Bremer Bay Road Junction

The scope of work includes widening (3m to 5 m wide) to provide for turning lanes for vehicles turning right off the highway into the minor road. Typically the project area would extend no more than 200 m either side on the junction along the highway and 100m down the minor road.

To assist Main Roads with the preparation of Environmental Management Plans could you please advise of any known infestations of declared weeds.

If you need any further information you can contact me direct on 9892 0521 or Geoff Hands on 9892 0552.

Regards

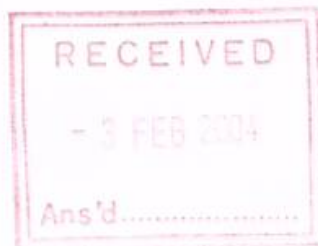
Ron

Appendix I

CALM Advice on Dieback

902-36 & 903-29

Your Ref:
Our Ref: 15:13
Enquires: G. Freebury
Phone:
Fax:
Email: gregf@calm.wa.gov.au



Jeanette Della Bona
Project Development Officer Environment
Main Roads Western Australia
P.O Box 503
Albany WA 6330

Dear Jeanette:

I am writing to you in response to your request for a dieback survey to be conducted for two intersections in the Albany area. I inspected the intersections on the 8th and 9th of January 2004.

I took soil and tissue samples from the Denmark-Mt Barker Road / South Coast Highway site as there had been some recent disturbance at the site, which made interpretation difficult. Results confirmed that *Phytophthora cinnamomi* (dieback) is present on the road verge west of the Denmark-Mt Barker Rd and north of the South Coast Hwy. I also took a sample on the southern side of the intersection, however due to the lack of vegetation I was only able to take a soil sample. The sample returned a negative result for *Phytophthora sp.* but this does not necessarily mean that the site is uninfected. As the site is downslope from a known infection, there is a high likelihood that it too is infected and that the pathogen is likely be present in the form of inactive chlamydospores. Therefore I have classed the southern side of the intersection as *Phytophthora* infested.

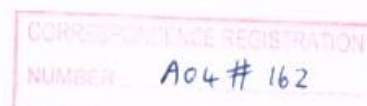
The area east of the intersection is classified as uninterpretable, due to there being insufficient indicator species present to be able to reliably determine *Phytophthora sp.* presence or absence and all of the road verges are classified as unprotectable. However, if you only intend to carry out roadworks on the western side of the intersection, as previously advised, there are no particular hygiene measures that need to be implemented other than ensuring that vehicles are clean before commencing at another site where the dieback status is either *Phytophthora* free, uninterpretable or unknown.

The Chester Pass Rd / Formby South Rd intersection is the site of an old *Phytophthora* infestation and all of the road verges associated with the intersection are infected and unprotectable. Therefore there are no particular hygiene measures that need to be implemented other than ensuring that vehicles are clean before commencing at another site where the dieback status is either *Phytophthora* free, uninterpretable or unknown. The Department also requests that machines are completely clean prior to commencing work at this site to avoid the potential for weeds or other soil borne diseases (eg *Armillaria luteobubalina*) to be introduced.

Please find attached *Phytophthora* occurrence maps for the two intersections and an invoice for this work. If you require any further information please contact me on 9842 4570.

Yours sincerely,

Greg Freebury
Nature Conservation Officer
February 3, 2004



FORMBY STH / CHESTERPASS RD

**PHYTOPHTHORA CINNAMOMI
OCCURRENCE MAP**

MAP LEGEND

- PHYTOPHTHORA FREE Apparently free of Phytophthora cinnamomi symptoms
- UNINTERPRETABLE Where susceptible plants are absent or few to enable interpretation for *P. cinnamomi* presence or absence.
- PHYTOPHTHORA Where current *P. cinnamomi* symptoms found. This is supported by laboratory recoveries of *P. cinnamomi* from soil or tissue samples
- UNPROTECTABLE Where current *P. cinnamomi* symptoms spread into these areas autonomously

NOTE: EXTENSIVE MASH VEGE AS UNPROTECTABLE
 INTERPRETED BY: GALEE FARRINGTON
 COMPLETED: 9/1/04
 METHOD OF INTERPRETATION: R. ADRIAN MICKELTHORP

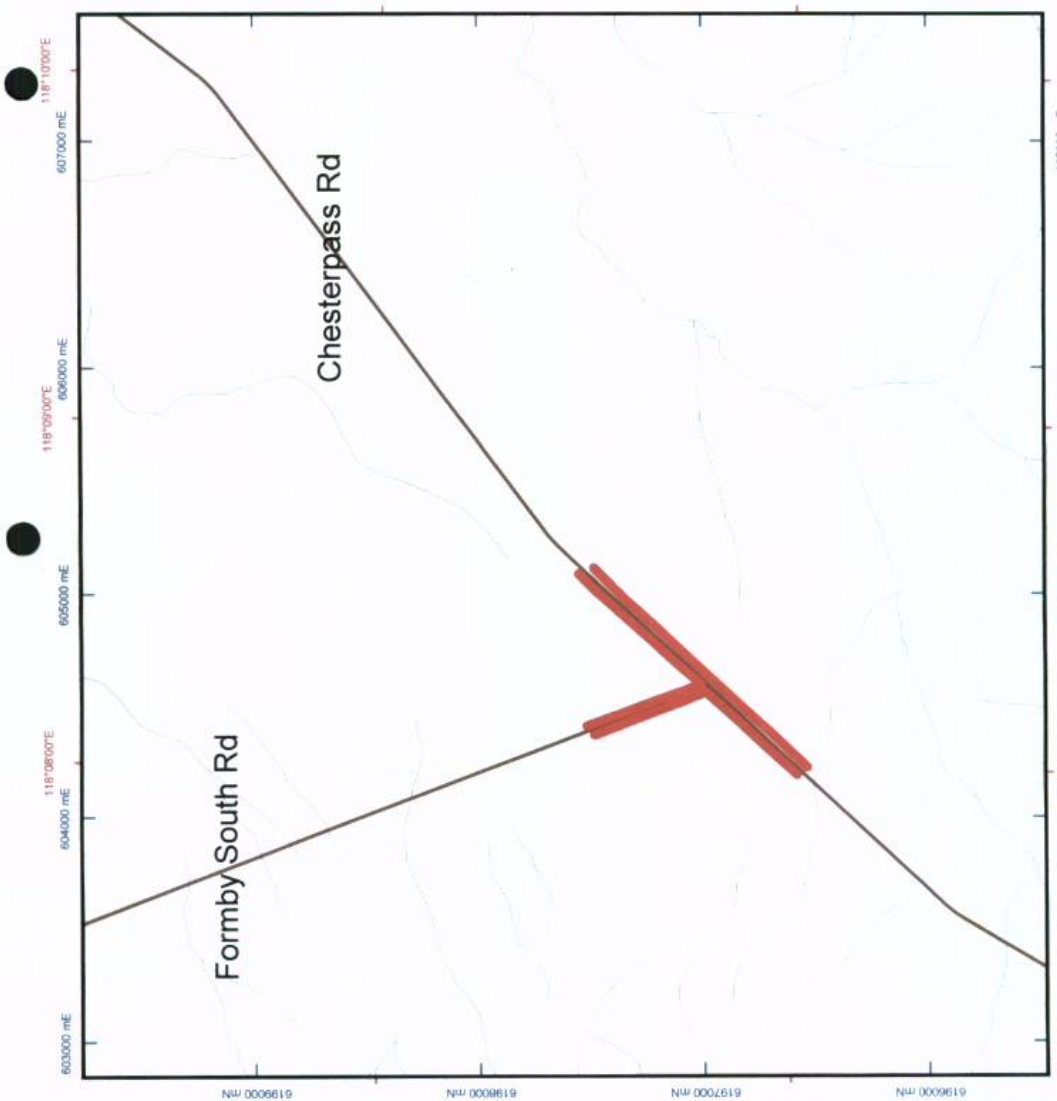
Scale 1:25,000
1cm represents 250m

Projection: Universal Transverse Mercator, UTM Zone 56, Datum: GDA84

Locality Map

Produced Under the Direction of
 Kerrianna Enderby, Director
 Department of Conservation & Land Management

Produced at 16:51 on February 2, 2004



Scale 1:25,000
1cm represents 250m

Projection: Universal Transverse Mercator, UTM Zone 56, Datum: GDA84

Locality Map

Produced Under the Direction of
 Kerrianna Enderby, Director
 Department of Conservation & Land Management

Produced at 16:51 on February 2, 2004

Appendix J

CALM Advice on Priority Flora

As it was known that two priority species *Calothamnus affinis* P4 and *Chordifex isomorphus* P4 are possibly located within the proposed area of disturbance for the proposed roadworks, discussions between Main Roads (Ms Jeanette Della Bona) and Ms Sarah Barrett Phone 9842 4500, CALM Albany) confirmed that these species were in relatively large numbers and there was no need for further management.



Photograph courtesy of CALM's Florabase application.



Photograph courtesy of CALM's Florabase application.



Photographs courtesy of CALM's Florabase application.



Appendix K

Department of Environment and Heritage Database Search

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10. EPBC ACT PROTECTED MATTERS REPORT

6 January 2004 16:52

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Information on the coverage of this report and qualifications on data supporting this report are contained in the [caveat](#) at the end of the report.

You may wish to print this report for reference before moving to other pages or websites.

The Australian Natural Resources Atlas at <http://www.environment.gov.au/atlas> may provide further environmental information relevant to your selected area. Information about the EPBC Act including significance guidelines, forms and application process details can be found at <http://www.ea.gov.au/epbc/assessmentsapprovals/index.html>

Search Type: Area
Buffer: 1 km
Coordinates: -34.36027,118.1383,
-34.36166,118.1394,
-34.36388,118.1369,
-34.36222,118.1361



Report Contents: [Summary](#)
[Details](#)
• [Matters of NES](#)
• [Other matters protected by the EPBC Act](#)
• [Extra Information](#)
[Caveat](#)
[Acknowledgments](#)

10.1 SUMMARY

10.2 MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance - see <http://www.ea.gov.au/epbc/assessmentsapprovals/guidelines/index.html>.

World Heritage Properties:	None
Wetlands of International Significance: (Ramsar Sites)	None
Commonwealth Marine Areas:	None
Threatened Ecological Communities:	None
<u>Threatened Species:</u>	22
<u>Migratory Species:</u>	2

10.3 OTHER MATTERS PROTECTED BY THE EPBC ACT

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may be required for the Commonwealth or agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

Please note that the current dataset on Commonwealth land only includes Commonwealth reserves. Further information on Commonwealth land would need to be obtained from relevant sources including Commonwealth agencies, local agencies, and land tenure maps.

Commonwealth Lands:	None
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A permit may be required for activities that may affect one or more of the following matters protected. Information on EPBC Act permit requirements and application forms can be found at <http://www.ea.gov.au/epbc/permits/index.html>.

<u>Listed Marine Species:</u>	1
Whales and Other Cetaceans:	None
Critical Habitats:	None

10.4 EXTRA INFORMATION

This part of the report provides information that may also be relevant to the area you have nominated.

<u>Conservation Reserves:</u>	1
Regional Forest Agreements:	None

10.5 DETAILS

10.6 MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE

Threatened Species [Dataset Information]	Status	Type of Presence
Birds		
Calyptorhynchus latirostris Carnaby's Black-Cockatoo, Short-billed Black-Cockatoo	Endangered	Species or species habitat likely to occur within area
Leipoa ocellata Mallee Fowl	Vulnerable	Species or species habitat likely to occur within area
Psophodes nigrogularis oregon Western Whipbird (western mallee)	Vulnerable	Species or species habitat likely to occur within area
Mammals		
Dasyurus geoffroii Chuditch, Western Quoll	Vulnerable	Species or species habitat likely to occur within area
Myrmecobius fasciatus Numbat	Vulnerable	Species or species habitat likely to occur within area
Setonix brachyurus Quokka	Vulnerable	Species or species habitat may occur within area
Plants		
Adenanthos pungens subsp. pungens	Vulnerable	Species or species habitat likely to occur within area
Andersonia axilliflora * Giant Andersonia	Endangered	Species or species habitat likely to occur within area
Banksia brownii * Brown's Banksia, Feather-leaved Banksia	Endangered	Species or species habitat likely to occur within area
Caladenia sp. Jarrah forest (S.D. Hopper 3990)	Vulnerable	Species or species habitat likely to occur within area
Conostylis misera Grass Conostylis	Endangered	Species or species habitat likely to occur within area
Darwinia meeboldii Cranbrook Bell	Vulnerable	Species or species habitat likely to occur within area
Darwinia oxylepis Gillham's Bell	Endangered	Species or species habitat likely to occur within area
Darwinia squarrosa Fringed Mountain Bell, Pink Mountain Bell	Vulnerable	Species or species habitat likely to occur within area
Drakaea confluens Hopper & A.P. Brown ms.	Endangered	Species or species habitat likely to occur within area
Dryandra anaton * Cactus Dryandra	Endangered	Species or species habitat likely to occur within area
Lambertia fairallii * Fairalls Honeysuckle	Endangered	Species or species habitat likely to occur within area
Leucopogon gnaphalioides Stirling Range Beard Heath	Endangered	Species or species habitat likely to occur within area
Sphenotoma drummondii	Endangered	Species or species habitat likely to occur within area
Thelymitra psammophila Sandplain Sun-orchid	Vulnerable	Species or species habitat likely to occur within area
Verticordia carinata Stirling Range Featherflower	Vulnerable	Species or species habitat likely to occur within area

Xyris exilis Stirling Range Xyris	Vulnerable	Species or species habitat likely to occur within area
--	------------	--

Migratory Species [Dataset Information]	Status	Type of Presence
---	---------------	-------------------------

Migratory Terrestrial Species

Birds

Haliaeetus leucogaster * White-bellied Sea-Eagle	Migratory	Species or species habitat likely to occur within area
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Leipoa ocellata Mallee Fowl	Migratory	Species or species habitat likely to occur within area
--	-----------	--

10.7 OTHER MATTERS PROTECTED BY THE EPBC ACT

Listed Marine Species [Dataset Information]	Status	Type of Presence
---	---------------	-------------------------

Birds

Haliaeetus leucogaster * White-bellied Sea-Eagle	Listed	Species or species habitat likely to occur within area
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10.8 EXTRA INFORMATION

Conservation Reserves [[Dataset Information](#)]

Stirling Range National Park, WA

10.9 CAVEAT

The information presented in this database has been provided by a range of data sources as acknowledged at the end of each report.

This database is designed to assist in identifying the locations of places which may be relevant in determining obligations under the *Environment Protection and Biodiversity Conservation Act 1999*. It holds mapped locations of World Heritage properties, Wetlands of International Importance, Commonwealth reserves, listed threatened, migratory and marine species and listed threatened ecological communities. It does not map Commonwealth areas at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

For species where the distributions are well known, maps are digitised from sources such as recovery plans and detailed habitat studies. Where appropriate, core breeding, foraging and roosting areas are delineated. For species whose distributions are less well known, point locations are collated from government wildlife authorities, museums, and non-government organisations; bioclimatic distribution models are generated and these validated by experts. In some cases, the distribution maps are based solely on expert knowledge.

Only selected species covered by the [migratory](#) and [marine](#) provisions of the Act have been mapped.

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as [extinct or considered as vagrants](#)
- some species and ecological communities that have only recently been listed
- cetaceans which are not listed as threatened
- [some terrestrial species](#) that overfly the Commonwealth marine area
- migratory species that are very [widespread, vagrant, or only occur in small numbers](#).

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites;
- seals which have only been mapped for breeding sites near the Australian continent.

10.10 ACKNOWLEDGMENTS

This database has been compiled from a range of data sources. Environment Australia acknowledges the following custodians who have contributed valuable data and advice:

- [New South Wales National Parks and Wildlife Service](#)
- [Department of Sustainability and Environment, Victoria](#)
- [Department of Primary Industries, Water and Environment, Tasmania](#)
- [Department of Environment and Heritage, South Australia Planning SA](#)
- [Parks and Wildlife Commission of the Northern Territory](#)
- [Environmental Protection Agency, Queensland](#)
- [Birds Australia](#)
- [Australian Bird and Bat Banding Scheme](#)
- [Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [Queensland Herbarium](#)
- [National Herbarium of NSW](#)
- [Royal Botanic Gardens and National Herbarium of Victoria](#)
- [Tasmanian Herbarium](#)
- [State Herbarium of South Australia](#)
- [Northern Territory Herbarium](#)
- [Western Australian Herbarium](#)
- [Australian National Herbarium, Atherton and Canberra](#)
- [University of New England](#)

- Other groups and individuals

[ANUCLIM Version 1.8, Centre for Resource and Environmental Studies, Australian National University](#) was used extensively for the production of draft maps of species distribution. Environment Australia is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

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