

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

Great Eastern Highway Road Reserve Clearing
SLK 380 to 465



Photo: Priority 1 Flora Species *Acacia desertorum*

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1 INTRODUCTION

Main Roads Goldfields-Esperance region is proposing to carry out works along Great Eastern Highway involving the clearing of roadside vegetation between SLK 380 and 465. The works are proposed as a fire mitigation measure following the loss of 3 truck driver's lives during the Boorabbin bush fires last December. The proposal forms part of a greater fire mitigation program for the area which has been discussed at District Emergency Management Advisory Committee (DEMC) meetings. This Committee is comprised of representatives from Main Roads Goldfields-Esperance Region, DEC Goldfields Region, WA Police, FESA, Water Authority, Telstra, Western Power and the Shires of Kalgoorlie, Coolgardie and Yilgarn.

The proposed mitigation works will essentially involve scrub-rolling of sections of dense, tall scrubland which poses the highest risk to motorists in the event of a bushfire given their high fuel load and close proximity to the road. Main Roads' proposed approach, which has been endorsed by DEC Goldfields Region, involves scrub-rolling 5m wide sections either side of the road for approximately 30km out of a 85km section of the Great Eastern Highway. DEC Goldfields Region are already in the process of carrying out their own scrub-rolling regime of wider sections of scrubland nearby the proposed project area.

In accordance with the Main Roads corporate procedure, a Low Impact Environmental Screening Checklist has been completed for the proposal (see Appendix A). Since the works involve clearing of native vegetation outside the maintenance zone, a Preliminary Environmental Impact Assessment is required. This report fulfils this requirement.

2 PROJECT LOCATION

The project is located within the shires of Yilgarn and Coolgardie. A map showing the boundaries of the project area is provided in Figure 1. The sections that have been proposed for clearing are:

- SLK 382.0 to 388.0 (minus a small section at SLK 385 for a priority flora species)
- SLK 410.3 to 412.3
- SLK 416.7 to 421.5
- SLK 425.6 to 427.5
- SLK 430.6 to 433.8
- SLK 434.8 to 437.0
- SLK 438.5 to 440.0
- SLK 452.6 to 460.7

Clearing of both sides of the road will occur for all of these sections. Other small pockets of high risk vegetation may also be cleared from within the greater project area (i.e. SLK 380-465).



Figure 1. Project Location

3 METHODOLOGY

3.1 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 (see Appendix B) and consulting where necessary (see Appendix C).

3.1.1 Threatened Flora, Fauna and Communities

The Species and Communities Branch of the Department of Environment and Conservation (DEC) was contacted for a search of their databases containing known populations of threatened flora and fauna. The presence of Threatened and Priority Ecological Communities (TECs & PECs) was determined by examining Main Roads GIS data (data is supplied to Main Roads by DEC every 6 months).

3.1.2 ESAs and Conservation Reserves

DEC's Native Vegetation Map Viewer (<http://www.dec.wa.gov.au/land/native-vegetation-conservation/data/native-vegetation-map-viewer.html>) was used to determine the location of any ESAs. The location of any Conservation Reserves was determined by examining the Shared Land Information Platform (SLIP) Natural Resource Management (NRM) database (<http://spatial.agric.wa.gov.au/slip/>) and consulting with the local DEC office where necessary.

3.1.3 Vegetation Type, Extent and Status

Vegetation types and associations were determined by examining the SLIP NRM database. Vegetation extent and status data was sourced from the Main Roads file "Native Vegetation in Western Australia - Extent, Type and Status" located on the Main Roads Environment Intranet site (http://intranet/online/branches/environment/word/car_reserve_analysis_2006.xls).

3.1.4 Air Quality

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

3.1.5 Heritage

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

3.1.6 Aboriginal Heritage

A Search of the Department of Indigenous Affairs' (DIA) database (<http://www.dia.wa.gov.au/Heritage--Culture/Heritage-management/Register-of-Aboriginal-sites/>) was undertaken to determine whether the project area contains any Aboriginal Heritage sites.

3.1.7 Wetlands

The location of wetlands within the project area was determined by examining the DEC's Geographic Data Atlas mapping tool (<http://maps.dec.wa.gov.au/idelve/doedataext/>) and/or the SLIP NRM database.

3.1.8 Sensitive Water Resources

The Department of Water's (DoW) Geographic Data Atlas was examined (<http://portal.water.wa.gov.au/portal/page/portal/MapsDataAtlases/GeographicDataAtlas>) to determine whether the project area supported, or was adjacent to, any significant lakes, rivers or wetlands or proclaimed areas (including public drinking water source areas).

3.1.9 Contaminated Sites

The presence of contaminated sites in the project area was determined by examining DEC's contaminated sites database where necessary (<http://www.dec.wa.gov.au/pollution-prevention/contaminated-sites/contaminated-sites-act/database.html>), and evaluating the surrounding land use history.

3.1.10 Acid Sulphate Soils

The Western Australian Planning Commission's (WAPC) acid sulphate soils maps were reviewed (<http://www.wapc.wa.gov.au/Publications/213.aspx>) to determine what level of risk the project area is exposed to.

3.1.11 Weeds

Where relevant, consultation was undertaken with the Department of Agriculture and Food (DAFWA) to determine whether there are any known populations of declared plants or significant weeds in or adjacent to the project area.

3.1.12 Dieback

Dieback was only considered a potential issue for the project if both the mean annual rainfall of the area is >400mm and if the project area resides below the 26th parallel. Consultation with the DEC was carried out as necessary.

3.2 Statutory Referral

The decision whether to refer the project to the Commonwealth's Department of Environment, Water, Heritage and the Arts (DEWHA) was based upon whether the project would impact upon matters of national environmental significance (refer to Appendix B - DEWHA's EPBC Act Protected Matters Database search).

The decision whether to refer the project to the WA Environmental Protection Authority (EPA) was based upon whether the project would be a "significant proposal" as defined by the Environmental Protection Act 1986.

As a result all potential environmental aspects relating to the project have been examined for significance (see [Assessment of Aspects and Impacts](#)).

3.3 Site Investigation

A site visit was carried out by Wayne Marquand (CMT) and Simon Weighell (GEnv) on the 19/11/08 to examine the general features of the area.

4 EXISTING ENVIRONMENT

The project area resides in the Southern Cross sub-region of the Coolgardie bioregion in Western Australia. Information relating to the existing environment of the area is provided in the table below. This information has been compiled through both desktop assessments and site visits.

Table 1. Existing environment information.

Factor	GEH Road Reserve Clearing SLK 380 – 465					
Vegetation Association	141	214	511	536	1148	1413
Vegetation Association Description	Medium woodland; York gum, salmon gum & gimlet	Mosaic: Medium woodland; goldfield eucalypts / Succulent steppe with open low woodland; myoporum over saltbush	Medium woodland; salmon gum & morrel	Medium woodland; morrell & rough fruited mallee (Eucalyptus corrugata)	Shrublands ; scrub-heath in the Coolgardie Region	Shrublands ; acacia, casuarina & melaleuca thicket
Current Extent (ha)	952,991	505,487	493,992	5,714	257,535	1,247,090
% Pre-European Extent Remaining	82.2	100.0	70.5	43.4	98.9	74.2
Soil type	Yellow sandplains, gravelly sandplains (Cowan <i>et al</i> , 2001).					
Topography	Gently undulating uplands dissected by broad valleys with bands of low greenstone hills (Cowan <i>et al</i> , 2001).					
Climate	Closest Met Station: Southern Cross Avg. Annual rainfall: 294.5 mm Avg Max Temp ranges: 16.3°C (Jul) to 34.5°C (Jan)					
Surrounding Land Use	Grazing (native pasture), Conservation Reserves, National Park					
Weed prevalence	Low.					

5 ASSESSMENT OF ASPECTS AND IMPACTS

The following table provides a summary of environmental aspects for the project and their assessment for potential environmental impact.

Table 2: Aspects and Impacts – Tom Starcevich Material Pits

Aspect	Evaluation of Potential Impacts
Air quality	Not relevant to the proposed works.
Dust	Likely to be a minor issue during works. No major sensitive receivers adjacent to the project area.
Fauna	Several threatened species and/or their habitat have been identified as potentially occurring within the project area (see Appendix B). With the relatively small amount of clearing involved compared to the vast areas of bushland adjacent to the project area, impacts on native fauna and/or its habitat are not expected to be significant.
Vegetation – clearing	<ul style="list-style-type: none"> Up to 32ha of native vegetation will be cleared for the proposed works. None of the 6 vegetation associations found in the project area are currently underrepresented at any of the three regional scales (State, IBRA region and IBRA sub-region). The condition of the vegetation in the area varies from degraded to very good (using the Keighery scale (Keighery, 1994)). The native vegetation to be cleared does not occur within an ESA as all clearing is confined to the road reserve. The native vegetation to be cleared will be done so using Main Roads state-wide Purpose permit (CPS 818/4).

Table 2: Aspects and Impacts – Tom Starcevich Material Pits

Aspect	Evaluation of Potential Impacts
Significant Flora / Ecological Communities	<p>According to various database searches (see Appendix B and Figures 2-6), no TECs, PECs, or Declared Rare Flora (DRF) are likely to be located in the proposed clearing areas. Furthermore, no TECs, PECs, DRF or Nationally protected species (DEWHA) were identified during the site visit. As a result no significant impacts upon these are expected.</p> <p>A priority 1 species (<i>Acacia desertorum</i>) has been identified at SLK 385, but this area will be marked prior to works to ensure no clearing occurs within close proximity to this area.</p> <p>The threatened flora database searches revealed that numerous other priority flora species may also occur within or in close proximity to the proposed clearing areas. As a result it is possible that some individual specimens may be severely impacted by the works. Given the narrow widths of clearing involved however, and the proposed scrub-rolling method to be employed, no significant long term impacts on the survival of any of these species are expected.</p>
Vegetation – weeds	Very few weed species (no declared weeds) were identified within the boundaries of the project area during the site visit. As a result the risk of spreading weeds as part of the proposed works is considered to be low, but standard weed hygiene measures are still to be applied. This includes ensuring that plant and equipment brought on to the site are clean of soil.
Vegetation – dieback	Dieback is not considered an issue given the project area receives less than 400 mm of average annual rainfall (Nearest meteorological station is Southern Cross which has an average annual rainfall of 294.5mm).
Reserves / Conservation areas	Several reserves and conservation areas (including national parks) are located adjacent to the project areas (see Figures 2-6). Since the clearing will be limited to the road reserve and the fact that it will only consist of narrow 5m strips, no significant impacts are expected on these sites. The potential for weed spread could be an issue so follow up monitoring will be carried out (see section 9).
Heritage (non-indigenous)	A search of the Heritage Council of Western Australia's on-line databases has indicated that there are no heritage listed sites present in the proposed clearing areas. Furthermore no items of significance were identified during the site visit.
Aboriginal heritage	A search of DIA's database identified no known sites of Aboriginal heritage significance within the proposed clearing areas. Several sites exist in close proximity to these clearing areas (see Figure 2) but no impacts are expected.
Surface water/drainage	Given the proposed clearing method (scrub-rolling), the proposed works are unlikely to significantly disturb or interrupt any natural drainage or surface run-off patterns
Wetlands	Various Government Agency database searches have not revealed any wetlands within the immediate vicinity of the project areas. This was confirmed during the site visit. As a result no significant impacts on wetlands are expected.
Groundwater	No dewatering or significant drainage modifications are required, hence no likely change to groundwater level or quality.
Noise and vibration	No major sensitive local receivers. The works are not expected to significantly contribute to noise levels at the nearest receivers.
Visual amenity	The proposed works are likely to result in substantial short term visual impacts but this cannot be considered significant enough to warrant further assessment. Natural regrowth of the vegetation is likely to eliminate any long term visual impact although this may be counteracted by any ongoing scrub-rolling regimes.
Hazardous substances	Not relevant to the proposed works.
Contamination	Given the relatively superficial nature of the required earthworks, there appears to be a low risk of any significant contamination issues. No known previous land use activities on or adjacent to the project areas have had the potential to create contamination.
Salinity	Given the nature and scale of the works, salinity is not considered an issue.

Table 2: Aspects and Impacts – Tom Starcevich Material Pits

Aspect	Evaluation of Potential Impacts
Acid Sulphate Soils	The WAPC's self-assessment (Planning Bulletin 64) indicates that no further soil investigations are required for the project. No dewatering or excavation below the water table is planned.
Environmentally Significant Landforms	There are no significant landforms in the vicinity of the project area.
Statutory Land Use Planning / Adjacent Land Use	No planning amendments are required as works are confined to the road reserve. The works are also not expected to significantly impact upon any surrounding land uses.

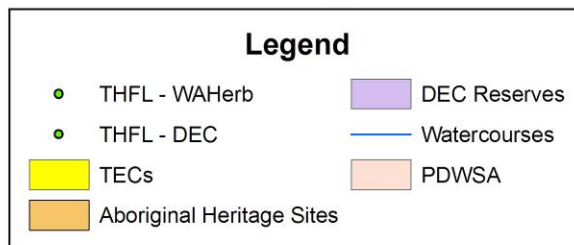
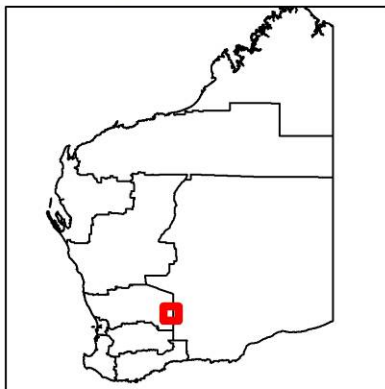
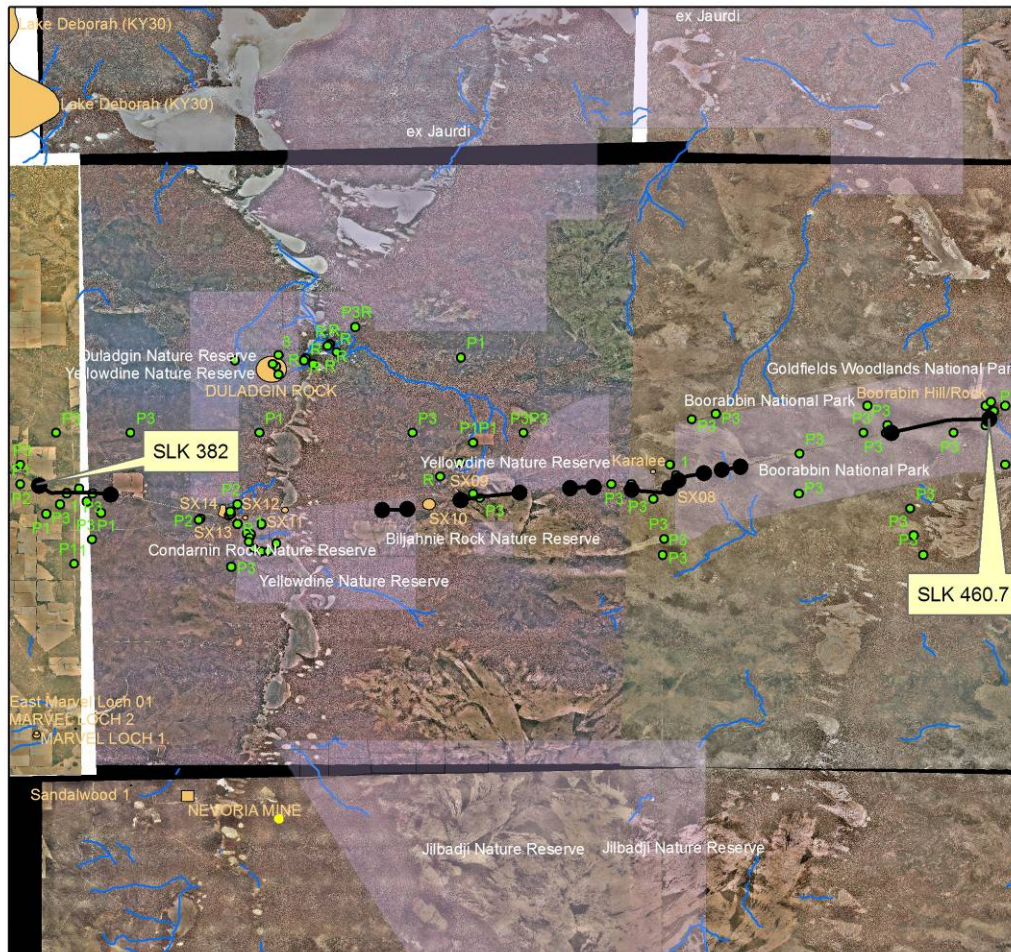


Figure 2. Environmental Constraints Map for the Project Area

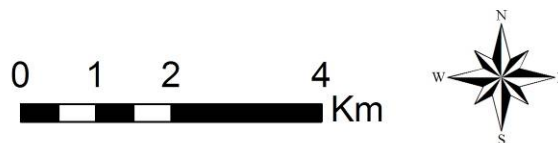
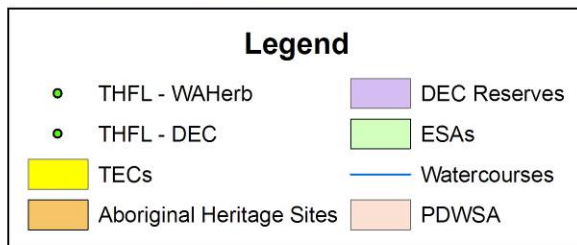
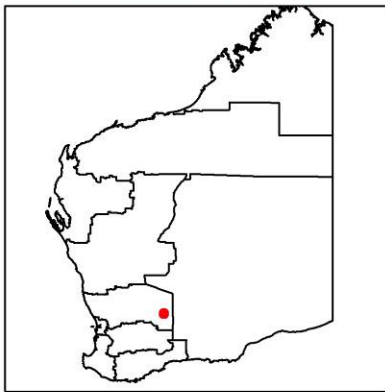
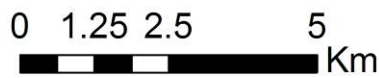
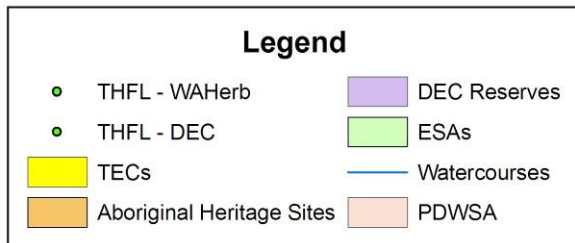
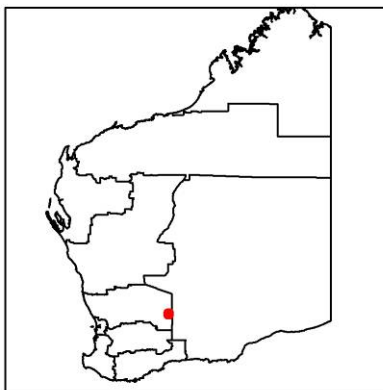
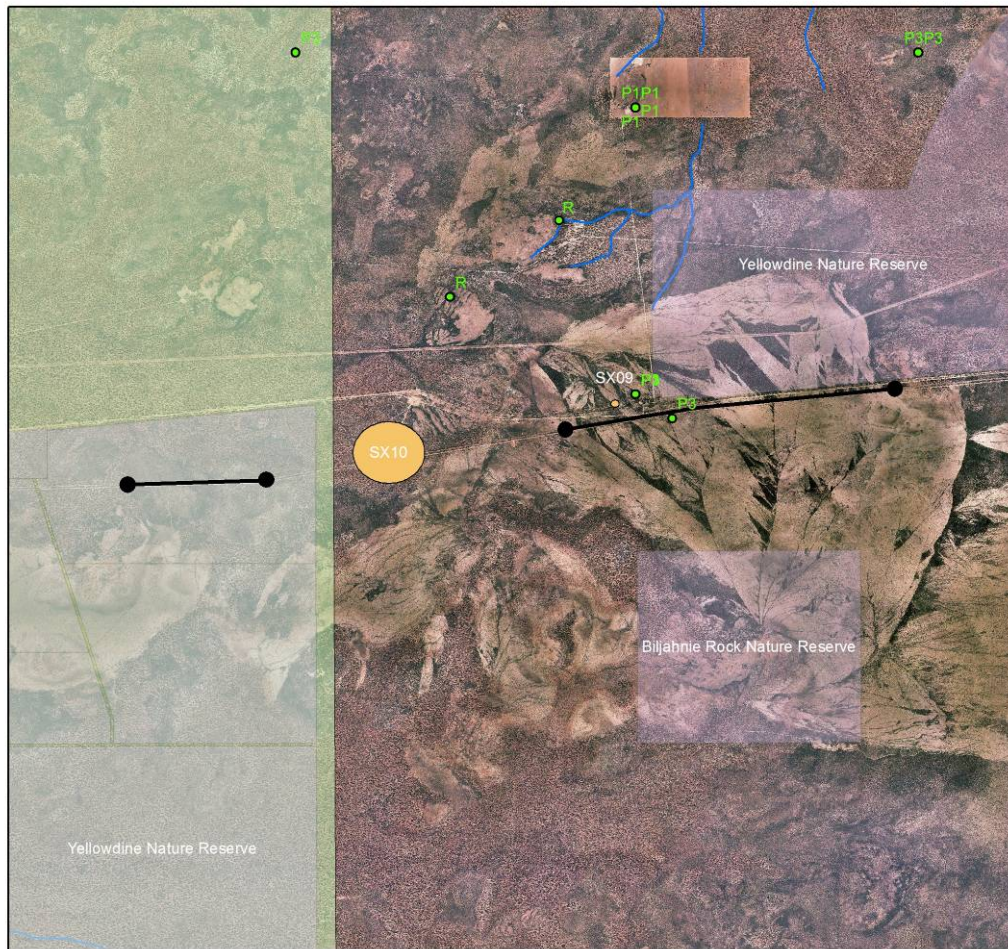


Figure 3. Environmental Constraints Map for SLK 382-388



**Figure 4. Environmental Constraints Map for SLK Sections
410.3 - 412.3 and 416.7 - 421.5**

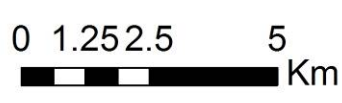
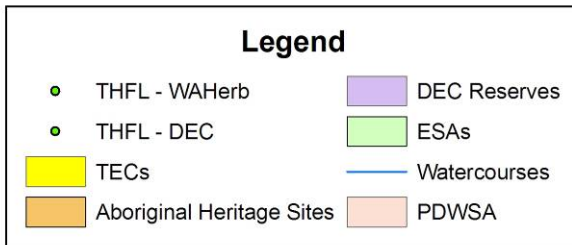
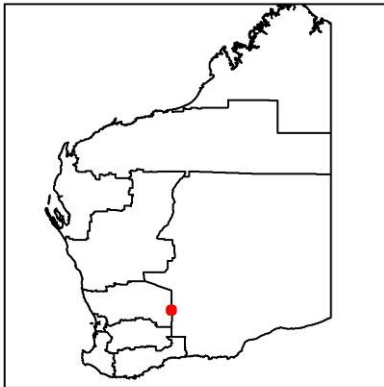
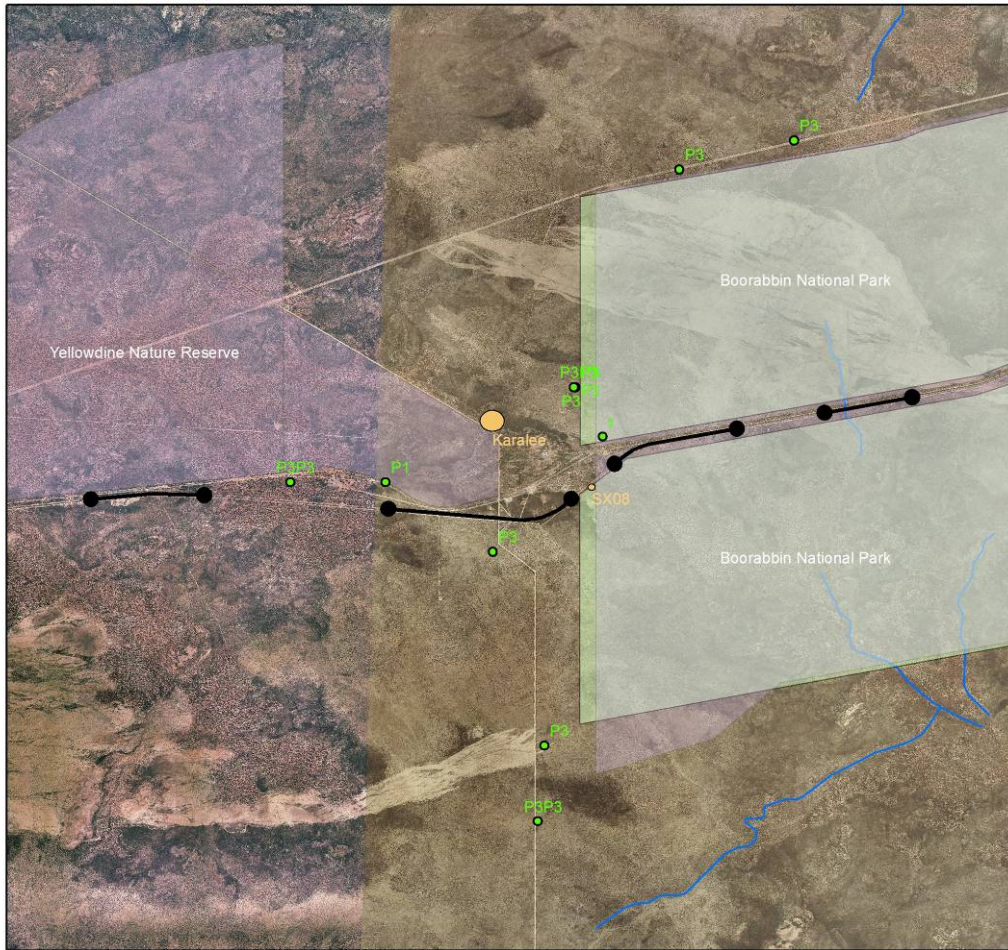


Figure 5. Environmental Constraints Map for SLK Sections 425.6 to 427.5, 430.6 to 433.8, 434.8 to 437.0 and 438.5 to 440.0

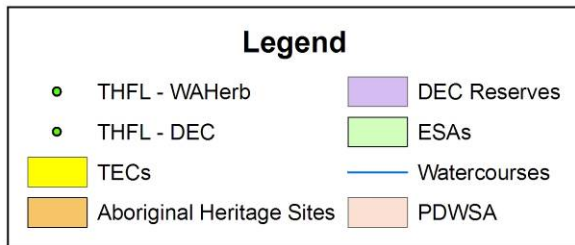
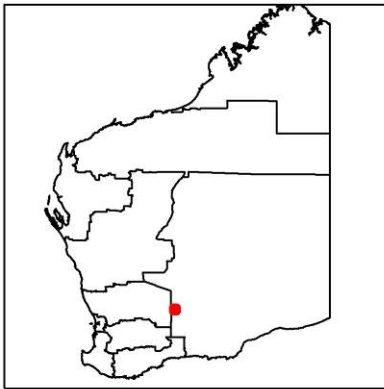
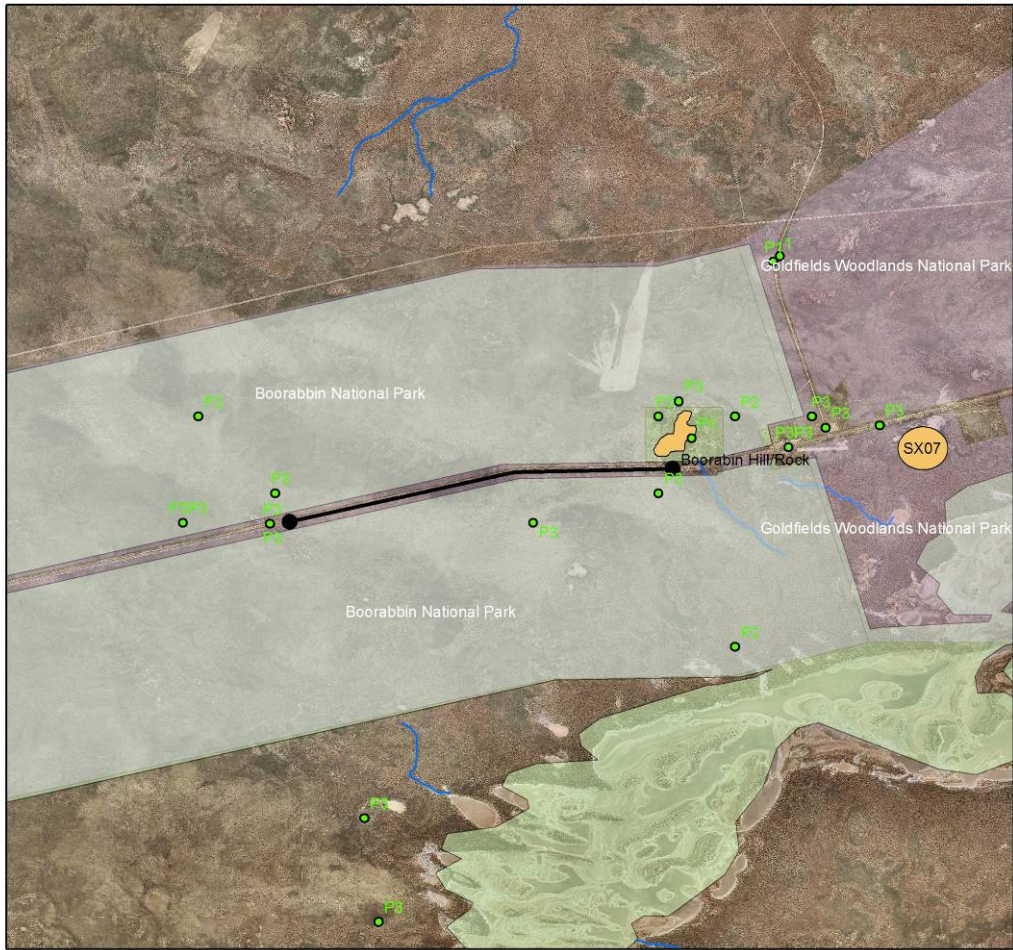


Figure 6. Environmental Constraints Map for SLK 452.6 to 460.7

6 CLEARING OF NATIVE VEGETATION

Native vegetation for this project will be cleared using Main Roads State-wide Project Purpose Permit (CPS 818/4). Native vegetation describes all indigenous aquatic and terrestrial vegetation (living or dead). The term does not include vegetation that was intentionally sown, planted or propagated unless it was required under a statutory condition.

No temporary clearing is associated with this project and therefore a revegetation plan is not required.

6.1 Avoiding, minimising and reducing the impact of clearing

The following measures will be / have been taken in an effort to avoid, minimise and reduce the impact of clearing associated with the project:

- Instead of clearing the entire 85km length of the highway located within the fire risk area, clearing will be restricted to the areas that pose the most significant fire risk. All woodland areas within the project area will therefore be avoided. Clearing will also be restricted to a width of just 5m either side of the road instead of the entire road reserve.
- The clearing method to be employed is likely to cause less impact to the area than conventional clearing methods. This is because the clearing will involve the use of a drum and dozer which will essentially just drive over the vegetation leaving it in situ. Many of the plants are not likely to be killed and therefore substantial regeneration is expected.
- Priority flora known to exist within the project area will be avoided with a buffer zone to be clearly marked to ensure no damage occurs to the species.

6.2 Assessment against Clearing Principles

In assessing whether the project is likely to have a significant impact on the environment, the project has been assessed against DEC's 10 clearing principles. This assessment has indicated that the project is not likely to be at variance with any of the 10 clearing principles.

Principle (a)	Native vegetation should not be cleared if it comprises a high level of biological diversity.
Assessment	The proposed clearing areas can not be considered to comprise a high level of biological diversity given the fact that there are large areas of native vegetation immediately adjacent to the project area in good or better condition and with equal or better levels of biodiversity.
Conclusion	<i>The proposal is not likely to be at variance to this principle.</i>

Principle (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.
Assessment	Given the narrow strips of clearing involved and the vast areas of vegetation that remain either side of the road, no significant impacts on native fauna or its habitat are expected. The clearing may cause greater difficulty for fauna crossing the road but there will still be well vegetated areas immediately adjacent to the road in nearby sections.
Conclusion	<i>The proposal is not likely to be at variance to this principle.</i>

Principle (c)	Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.
Assessment	No rare flora has been identified within or nearby the project area as a result of desktop surveys and site visits to the area.
Conclusion	<i>The proposal is not likely to be at variance to this principle.</i>

Principle (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.
Assessment	No TECs have been identified within or nearby the project area as a result of desktop surveys and site visits to the area.
Conclusion	<i>The proposal is not likely to be at variance to this principle.</i>

Principle (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.
Assessment	None of the vegetation within the project area is currently considered underrepresented with all vegetation associations in question having >30% of their pre-European extent remaining at all of the 3 regional scales (i.e. State, IBRA region and IBRA sub-region).
Conclusion	<i>The proposal is not likely to be at variance to this principle.</i>

Principle (f)	Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.
Assessment	No watercourses or wetlands are located within or in close proximity to any of the proposed clearing areas.
Conclusion	<i>The proposal is not likely to be at variance to this principle.</i>

Principle (g)	Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.
Assessment	Given the narrow strips of clearing involved and the fact that the project area is surrounded by native vegetation in good or better condition, the clearing is not expected to cause appreciable land degradation. No significant weed species have been identified in the project area and as a result it is unlikely that weed spread will become a significant issue as a result of the clearing.
Conclusion	<i>The proposal is not likely to be at variance to this principle.</i>

Principle (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.
Assessment	Given the narrow strips of clearing involved and the fact that clearing is to be confined to the road reserve, no significant impacts are expected.
Conclusion	<i>The proposal is not likely to be at variance to this principle.</i>

Principle (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.
Assessment	Since the clearing involves scrub-rolling, significant changes to the natural drainage pattern of the area and therefore quality of surface and underground water is not expected.
Conclusion	<i>The proposal is not likely to be at variance to this principle.</i>

Principle (j)	Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding.
Assessment	The project area is not considered to be prone to flooding and given the fact that the clearing will be spread out over a large area, no significant impact to the incidence of flooding is expected.
Conclusion	<i>The proposal is not likely to be at variance to this principle.</i>

7 STAKEHOLDER CONSULTATION

A summary of stakeholder consultation carried out for the project is provided in Table 3. Evidence of stakeholder consultation can be found in Appendix C.

Table 3. Summary of stakeholder consultation carried out for the environmental aspects of the project.

Name	Agency	Date	Comments
District Emergency Management Advisory Committee	DEC, FESA, Western Power, Telstra, Shires of Kalgoorlie, Coolgardie, and Yilgarn, Police, Water Authority	18/11/08	Fire Sub-Committee Meeting
Ryan Butler	DEC Goldfields Region	24/11/08	Fire Mitigation

8 ENVIRONMENTAL MANAGEMENT PLAN

An Environmental Management Plan (EMP) has been developed for the project (see Appendix D) taking into account the assessments carried out above. The main aim of this EMP is to provide a management plan to assist in minimising the environmental impacts of the activities associated with the proposed works, and to identify who is responsible for the implementation of any subsequent management strategies.

The EMP will only address site-specific issues that were identified during the PEIA. The areas that require special management will be addressed in terms of:

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

9 MONITORING

The project area will be inspected every six months for the first two years after clearing to ensure that weed spread or establishment has not occurred.

10 AUDITING

Audits against the EMP are not required as the project is small in scale with minimal environmental risk. On-ground checking during works will be carried out by the Main Roads Goldfields-Esperance Environment Officer.

11 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 EPA or DEWHA.

12 REFERENCES

Cowan, M., Graham, G. & McKenzie, N., (2001) "Coolgardie 2 (COO2 – Southern Cross subregion)", *A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions in 2002*, Department of Conservation and Land Management, Western Australia (accessed online at http://www.dec.wa.gov.au/pdf/science/bio_audit/coolgardie02_p143-155.pdf on 24/11/08).

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

Appendix A

Low Impact Environmental Screening Checklist

Form No. 6707/001/01

Checklist - Low Impact Screening Checklist

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

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

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

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

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

Project Name GREAT EASTERN HIGHWAY ROAD RESERVE CLEARING

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

Completed By: *Signature* Wayne Marquand *Date* 22/10/2008
Name Wayne Marquand *Title* A/Contract Manager TNC

To be reviewed by *Signature* S. Weighell *Date* 22/10/08
 a Main Roads *Name* Simon Weighell *Title* Graduate Environment
 Environment Officer

Comments: DEC has asked for Main Roads Goldfields Esperance Region if we can clear native vegetation from top of drain back slope to approximately 5m outside maintenance zone.

The sections to be cleared various both sides of Great Eastern Highway between S1k:398.50 to 463.00.

Total distance to clear, is approximately 30kms each side of highway with a total area of 30ha.

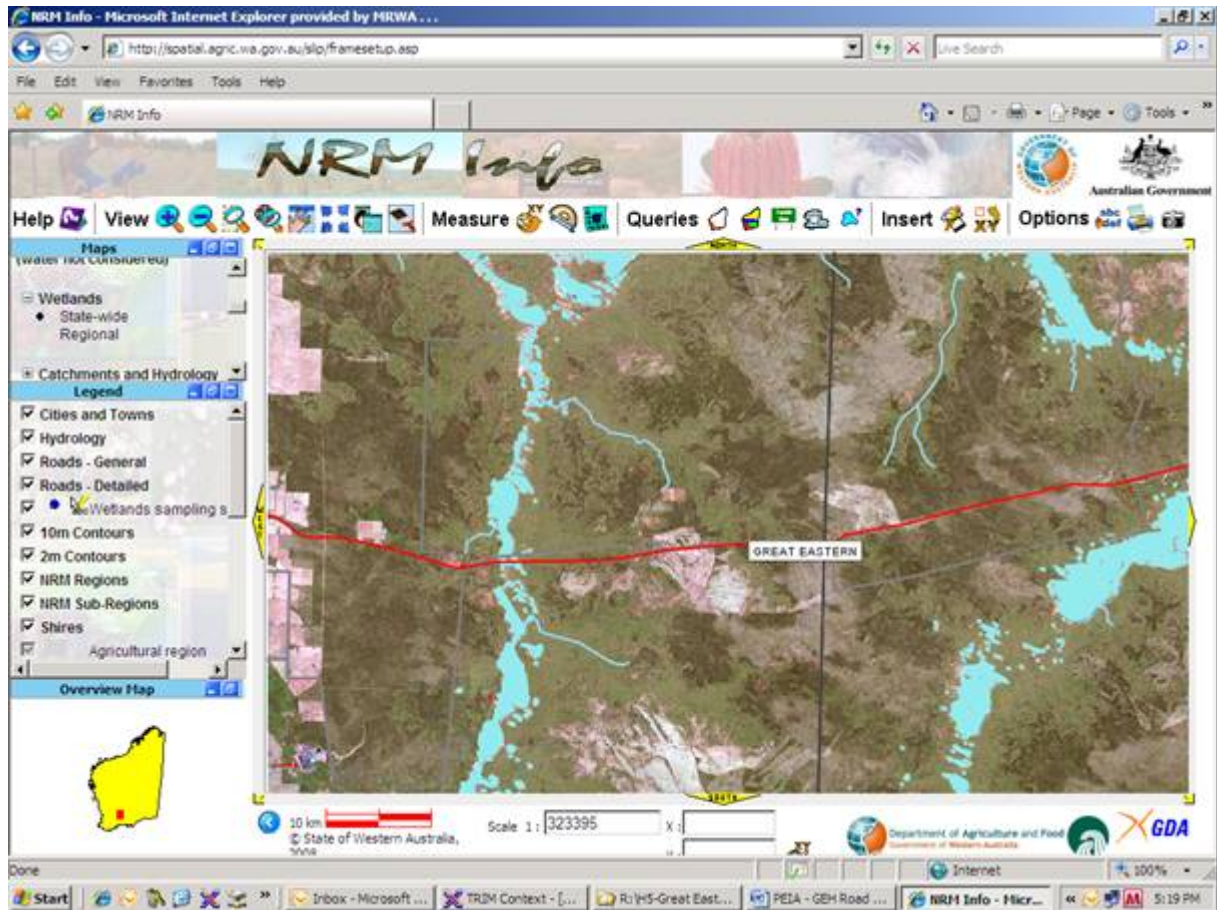
PEIA required.

MAIN ROADS Western Australia
 Form 6707/001 Screening Checklist Rev 3.doc

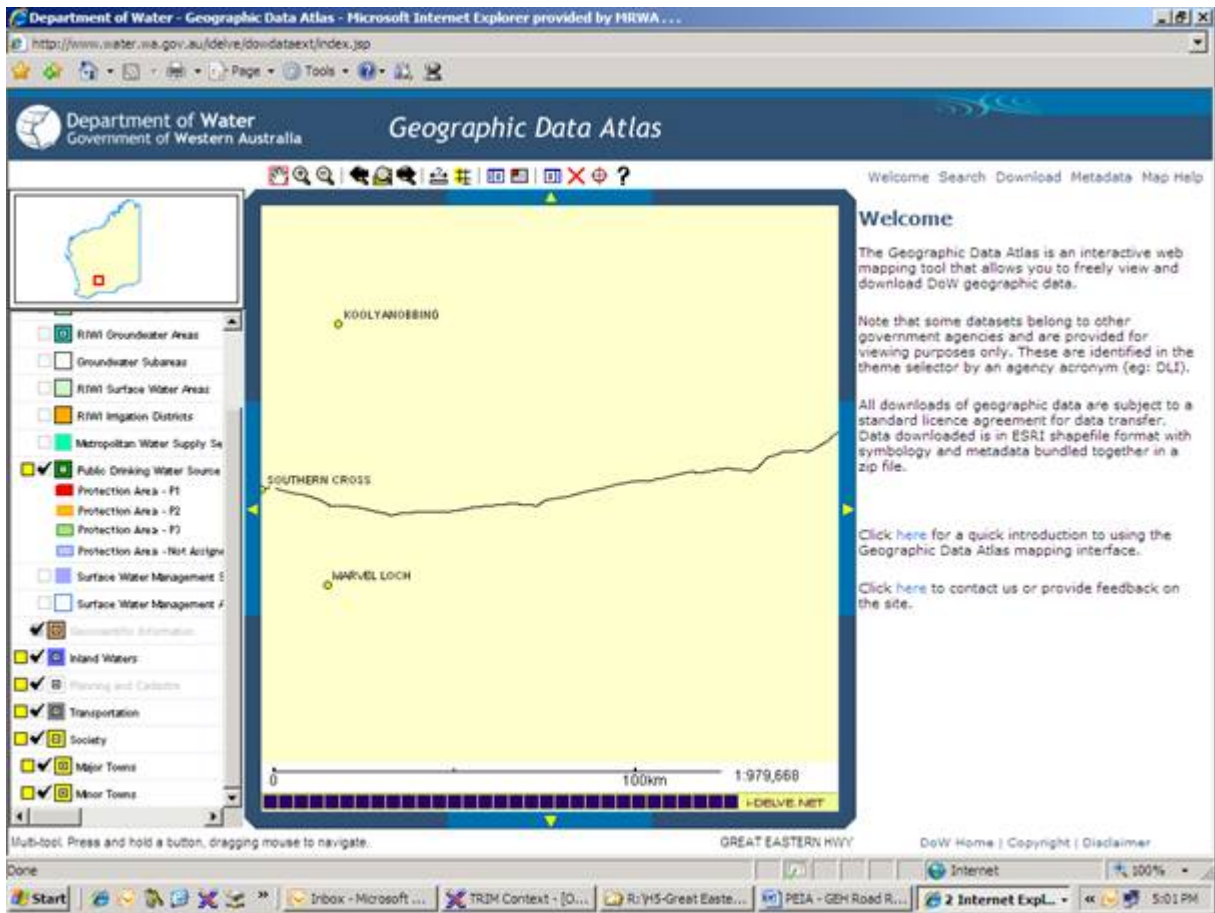
300587

Appendix B

Relevant Government Agency Database Searches



NRM SLIP database search showing the extent of wetlands in the project area. No clearing will be taking place in these areas.



DoW's Geographic Data Atlas showing no significant water protection areas in the project area.

Threatened and Priority Fauna Database

Page 1 of 2

30.9158°S 119.3088°E / 31.5941°S 120.6891°E Great Eastern Hwy section (plus ~30km buffer)

* *Date Certainty Seen Location Name Method*

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

Dasyurus geoffroii Chuditch 4 records

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

Date	Certainty	Seen	Location Name	Method
1989	1	1	Ghooli	Dead
1989	1	1	SOUTHERN CROSS	
1994	2	1	Karalee	Night sighting
1994	2	1	KARALEE	Night sighting

Leipoa ocellata Malleefowl 1 records

This species was once widely distributed across southern Australia. It prefers woodland or shrubland with an abundant litter layer that provides essential material for the construction of its nest mound.

Date	Certainty	Seen	Location Name	Method
2007	1	1	Southern Cross/Marvel Loch	Day sighting

Platycercus icterotis xanthogenys Western Rosella (inland ssp) 1 records

This subspecies of the Western Rosella occurs in eucalypt and casuarina woodlands and scrubs, especially of Salmon Gum and tall mallee.

Date	Certainty	Seen	Location Name	Method
1981	1		Victoria Rock	Day sighting

Aganippe castellum Tree-stem Trapdoor Spider 1 records

This species lives in summer dry bogs prone to irregular flooding and builds a characteristic burrow entrance against a tree stem.

Date	Certainty	Seen	Location Name	Method
1937	1	1	Southern Cross	Caught or trapped

Schedule 4 - Other specially protected fauna

Cacatua leadbeateri Major Mitchell's Cockatoo 3 records

This species is sporadically distributed through arid and semi-arid Australia and may occur in sparsely timbered grasslands and shrublands and rocky outcrops.

Date	Certainty	Seen	Location Name	Method
1980	1	7	Boorabbin National Park	Day sighting
1983	1	4	Koorawalyee	Day sighting
1983	1	8	Koorawalyee	Day sighting

Priority Four: Taxa in need of monitoring

Nyctophilus timoriensis (central form) Central Long-eared Bat 1 records

This species of bat roosts in tree hollows and under loose bark but little else is known about this species.

Date	Certainty	Seen	Location Name	Method
1981	1	1	Woolgangie	

Charadrius rubricollis Hooded Plover 1 records

This species frequents the margins and shallows of salt lakes, also along coastal beaches, where it forages for invertebrates along the water's edge.

Date	Certainty	Seen	Location Name	Method
1999	1	2	Victoria Rock	Day sighting

Hylacola cauta whitlocki Shy Heathwren (western ssp) 2 records

This species is an uncommon resident in mallee undergrowth.

Date	Certainty	Seen	Location Name	Method
1981	2		Victoria Rock	Day sighting
2007	0	1	Marvel Loch	Day sighting

Thursday, 20 November 2008

Department of
Environment and Conservation


30.9158°S 119.3088°E / 31.5941°S 120.6891°E Great Eastern Hwy section (plus ~30km buffer)

* Date	Certainty	Seen	Location Name	Method
<i>Oreoica gutturalis gutturalis</i>			Crested Bellbird (southern)	2 records
This sedentary and solitary species inhabits the drier mallee woodlands and heaths of the southern parts of the State.				
1981	1		Victoria Rock	Day sighting
2007	1	1	Marvel Loch	Day sighting
<i>Pomatostomus superciliosus ashbyi</i>			White-browed Babbler (western wheatbe	4 records
This species of bird lives in eucalypt forests and woodlands, and forages on or near the ground for insects and seeds.				
2007	1	3	Marvel Loch	Day sighting
2007	1	2	Marvel Loch	Day sighting
2007	1	1	Marvel Loch	Day sighting
2007	1	4	Marvel Loch	Day sighting

- * 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




Aboriginal Heritage Inquiry System results for the project area:



Department of Indigenous Affairs
Government of Western Australia

Aboriginal Heritage Inquiry System
Register of Aboriginal Sites



Department of Indigenous Affairs

Search Criteria

11 sites in a search box. The box is formed by these diagonally opposed corner points:

GDA94	
Latitude	Longitude
-31° 20' 50"	119° 25' 40"
-31° 10' 48"	120° 20' 15"

MGA coordinates could not be shown because the search area spans multiple zones.

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Report created 21 Nov 2008 16:44:55. Identifier: 528394.

Page 1



Disclaimer

Aboriginal sites exist that are not recorded on the Register of Aboriginal Sites, and some registered sites may no longer exist. Consultation with Aboriginal communities is on-going to identify additional sites. The AHA protects all Aboriginal sites in Western Australia whether or not they are registered.

Copyright

Copyright in the information contained herein is and shall remain the property of the State of Western Australia. All rights reserved. This includes, but is not limited to, information from the Register of Aboriginal Sites established and maintained under the Aboriginal Heritage Act 1972 (AHA).

Legend

Restriction

- N No restriction
- M Male access only
- F Female access

Access

- C Closed
- O Open
- V Vulnerable

Coordinate Accuracy

Accuracy is shown as a code in brackets following the site coordinates.

- [Reliable] The spatial information recorded in the site file is deemed to be reliable, due to methods of capture.
- [Unreliable] The spatial information recorded in the site file is deemed to be unreliable due to errors of spatial data capture and/or quality of spatial information reported.

Status

- L Lodged
- I Insufficient information
- P Permanent register
- S Stored data

- IR
- PR
- SR

- Insufficient information (as assessed by Site Assessment Group)
- Permanent register (as assessed by Site Assessment Group)
- Stored data (as assessed by Site Assessment Group)

Site Assessment Group (SAG)

Sites lodged with the Department are assessed under the direction of the Registrar of Aboriginal Sites. These are not to be considered the final assessment.

Final assessment will be determined by the Aboriginal Cultural Material Committee (ACMC).

Spatial Accuracy

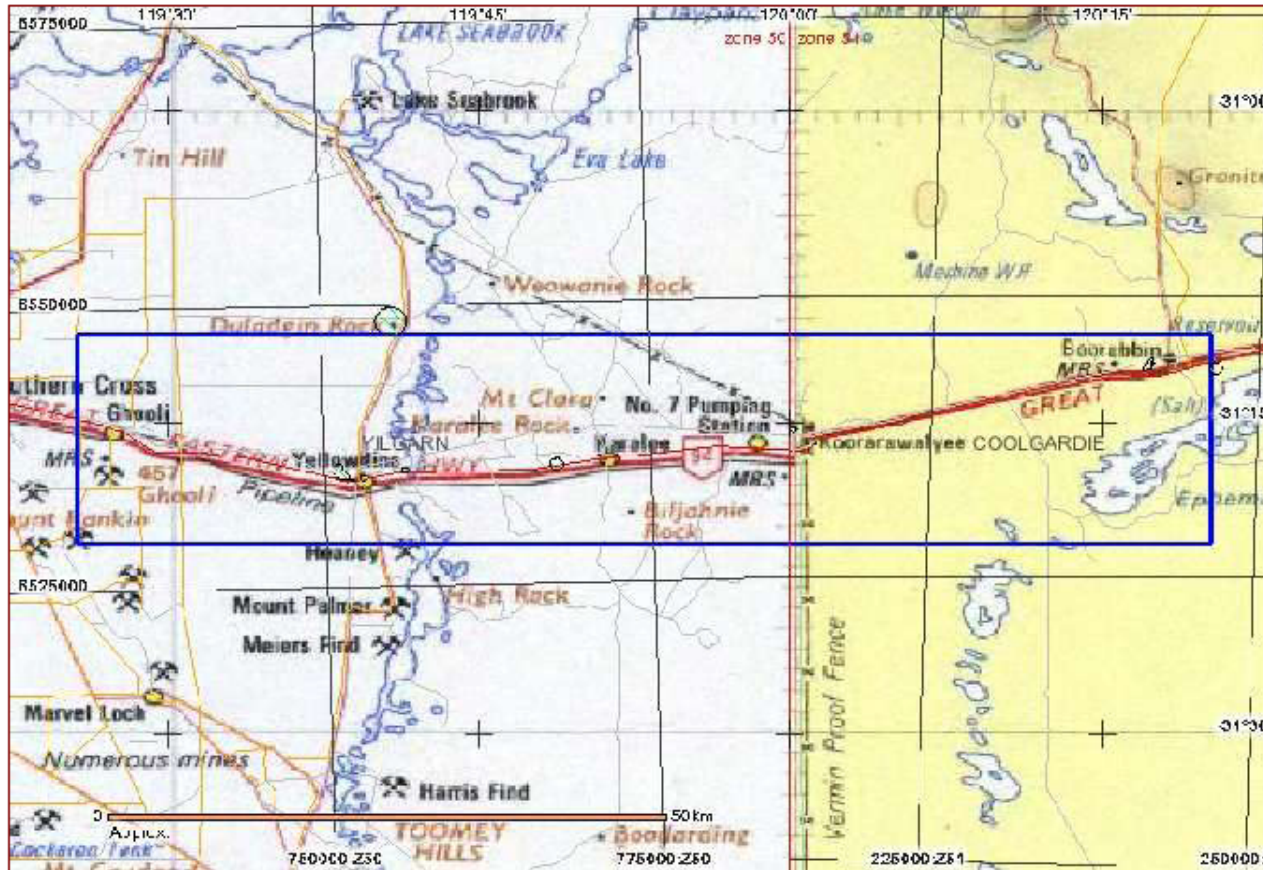
Index coordinates are indicative locations and may not necessarily represent the centre of sites, especially for sites with an access code "closed" or "vulnerable". Map coordinates (Lat/Long) and (Easting/Northing) are based on the GDA 94 datum. The Easting / Northing map grid can be across one or more zones. The zone is indicated for each Easting on the map, i.e. '5000000:250' means Easting=5000000, Zone=50.



Site ID	Status	Access	Restriction	Site Name	Site Type	Additional Info	Informants	Coordinates	Site No.
4783	P	O	N	Duladgin Rock		Water Source		755341mE 8548550mN Zone 50 [Reliable]	S01986
20138	L	O	N	Karalee	Artefacts / Scatter		*Registered Informant names available from DIA.	214507mE 8538158mN Zone 51 [Reliable]	
20835	L	O	N	Sx07		Natural Feature	*Registered Informant names available from DIA.	246650mE 8544420mN Zone 51 [Unreliable]	
20836	L	O	N	Sx08		Natural Feature	*Registered Informant names available from DIA.	216204mE 8536912mN Zone 51 [Unreliable]	
20837	L	O	N	Sx09		Natural Feature	*Registered Informant names available from DIA.	771025mE 8536300mN Zone 50 [Unreliable]	
20839	L	O	N	Sx10		Natural Feature	*Registered Informant names available from DIA.	787747mE 8535565mN Zone 50 [Reliable]	
20840	L	O	N	Sx11	Mythological	Natural Feature	*Registered Informant names available from DIA.	756125mE 8535300mN Zone 50 [Reliable]	
20841	L	O	N	Sx12		Natural Feature	*Registered Informant names available from DIA.	752911mE 8534671mN Zone 50 [Reliable]	
20842	L	O	N	Sx13		Natural Feature	*Registered Informant names available from DIA.	752138mE 8534538mN Zone 50 [Unreliable]	
20843	L	O	N	Sx14		Natural Feature	*Registered Informant names available from DIA.	751319mE 8535246mN Zone 50 [Reliable]	



Site ID	Status	Access	Restriction	Site Name	Site Type	Additional Info	Informants	Coordinates	Site No.
24393	L	O	N	Boorabin Hill/rock	Historical	Archeological Deposit, Camp, Named Place, Natural Feature, Water Source	*Registered Informant names available from DIA.	241540mE 8544584mN Zone 51 [Reliable]	



Legend

- Highlighted Area
- Town
- Map Area
- Search Area

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Copyright for Native Title Land Claim, Local Government Authority, Mining Tenement boundaries shall at all times remain the property of the State of Western Australia, All rights reserved.

For further Important information on using this information please see the Department of Indigenous Affairs' Terms of Use statement at <http://www.dia.wa.gov.au/Terms-Of-Use/>

DEWHA's EPBC Act Protected Matters Report for the project areas:



Australian Government

Department of the Environment, Water, Heritage and the Arts

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Protected Matters Search Tool

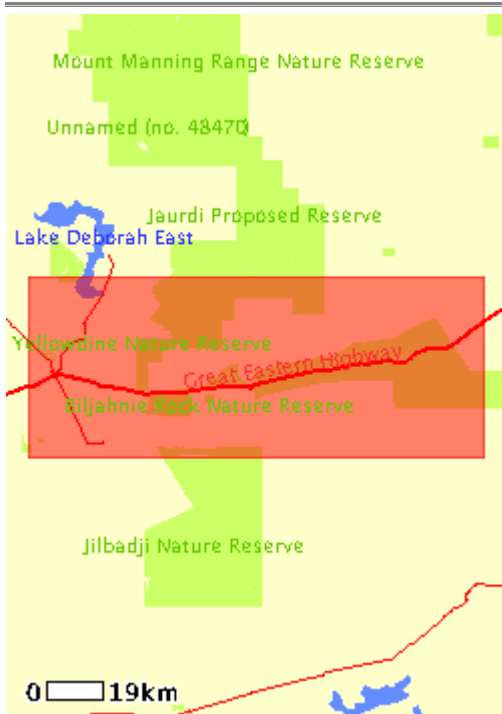
EPBC Act Protected Matters Report

24 November 2008 16:15

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.environment.gov.au/epbc/assessmentsapprovals/index.html>



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

Search Type: Area

Buffer: 0 km

Coordinates: -30.8891,119.2359, -31.5192,119.2359, -31.5192,120.8220, -30.8891,120.8220



Report Contents: [Summary](#)

[Details](#)

- [Matters of NES](#)
- [Other matters protected by the EPBC Act](#)
- [Extra Information](#)

[Caveat](#)

[Acknowledgments](#)

Summary

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.environment.gov.au/epbc/assessmentsapprovals/guidelines/index.html>.

World Heritage Properties: None

National Heritage Places: None

**Wetlands of International Significance:
(Ramsar Sites)** None

Commonwealth Marine Areas: None

Threatened Ecological Communities: None

Threatened Species: 7

Migratory Species: 7

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 also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the

actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place and the heritage values of a place on the Register of the National Estate. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage/index.html>.

Please note that the current dataset on Commonwealth land is not complete. Further information on Commonwealth land would need to be obtained from relevant sources including Commonwealth agencies, local agencies, and land tenure maps.

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species. Information on EPBC Act permit requirements and application forms can be found at <http://www.environment.gov.au/epbc/permits/index.html>.

<u>Commonwealth Lands:</u>	1
Commonwealth Heritage Places:	None
<u>Places on the RNE:</u>	6
<u>Listed Marine Species:</u>	4
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves:	None

Extra Information

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

<u>State and Territory Reserves:</u>	12
Other Commonwealth Reserves:	None
Regional Forest Agreements:	None

Details

Matters of National Environmental Significance

Threatened Species [Dataset Information]	Status	Type of Presence
Birds		
<i>Acanthiza iredalei iredalei</i> Slender-billed Thornbill (western)	Vulnerable	Species or species habitat likely to occur within area
<i>Leipoa ocellata</i> Malleefowl	Vulnerable	Species or species habitat likely to occur within area
Plants		
<i>Eremophila viscida</i> Varnish Bush	Endangered	Species or species habitat may occur within area
<i>Frankenia parvula</i>	Endangered	Species or species habitat known

Short-leaved Frankenia		to occur within area
Gastrolobium graniticum Granite Poison	Endangered	Species or species habitat likely to occur within area
Roycea pycnophylloides Saltmat	Endangered	Species or species habitat likely to occur within area
Thelymitra manginii K.Dixon & Batty ms.	Endangered	Species or species habitat likely to occur within area

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

Migratory Terrestrial Species

Birds

Leipoa ocellata Malleefowl	Migratory	Species or species habitat likely to occur within area
Merops ornatus Rainbow Bee-eater	Migratory	Species or species habitat may occur within area

Migratory Wetland Species

Birds

Ardea alba Great Egret, White Egret	Migratory	Species or species habitat may occur within area
Ardea ibis Cattle Egret	Migratory	Species or species habitat may occur within area

Migratory Marine Birds

Apus pacificus Fork-tailed Swift	Migratory	Species or species habitat may occur within area
Ardea alba Great Egret, White Egret	Migratory	Species or species habitat may occur within area
Ardea ibis Cattle Egret	Migratory	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

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

Birds

Apus pacificus Fork-tailed Swift	Listed - overfly marine area	Species or species habitat may occur within area
Ardea alba Great Egret, White Egret	Listed - overfly marine area	Species or species habitat may occur within area
Ardea ibis Cattle Egret	Listed - overfly marine area	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater	Listed - overfly marine	Species or species habitat may occur within area

area

Commonwealth Lands [[Dataset Information](#)]

Unknown

Places on the RNE [[Dataset Information](#)]

Note that not all Indigenous sites may be listed.

Historic

[Lisignolis Store \(former\) WA](#)

[No 6 Steam Pumping Station WA](#)

[No 8 Pumping Station including Contents WA](#)

Natural

[Boorabbin National Park WA](#)

[Jilbadji Nature Reserve WA](#)

[Yellowdine Proposed Reserve WA](#)

Extra Information

State and Territory Reserves [[Dataset Information](#)]

Biljahnies Rock Nature Reserve, WA

Boorabbin National Park, WA

Condarnin Rock Nature Reserve, WA

Duladgin Nature Reserve, WA

Frog Rock Nature Reserve, WA

Goldfields Woodlands Conservation Park, WA

Goldfields Woodlands National Park, WA

Jilbadji Nature Reserve, WA

Un-named (No. 25801) Nature Reserve, WA

Un-named (No. 36918) Nature Reserve, WA

Wockallary Nature Reserve, WA

Yellowdine Nature Reserve, WA

Appendix C

Consultation

From: MARQUAND Wayne (CMT/A)
Sent: Monday, 24 November 2008 8:12 AM
To: WEIGHELL Simon (GEnv)
Subject: FW: Highway Works - fire mitigation

Hi Simon

As per our discussion.

Regards

Wayne

From: Butler, Ryan [mailto:Ryan.Butler@dec.wa.gov.au]
Sent: Monday, 24 November 2008 8:09 AM
To: MARQUAND Wayne (CMT/A)
Subject: FW: Highway Works - fire mitigation

G'day Wayne,

Following the DEMC fire sub-committee meeting on November 18th 2008, the DEC Goldfields Region endorses the fire mitigation works proposed along the Great Eastern Hwy as per the MRWA normal environmental assessment processes. This is the scrub-rolling (using a heavy drum and dozer) of 5m width both sides of the road for up to 60km along the edge of the Hwy with the proposed extension to areas east of the VPF near Yellowdine and Ghooli as discussed in the meeting.

Regards

Ryan Butler | Regional Fire Coordinator

DEC Goldfields Region | PO Box 10173 Kalgoorlie WA 6433

☎(08) 9080 5555 | 📠(08) 9021 7831 | 📠 0429 102 295

✉ ryan.butler@dec.wa.gov.au

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Appendix D

Environmental Management Plan

ENVIRONMENTAL MANAGEMENT PLAN					
Timing	Topic	Objective	Action	Responsible Party	Advice
All phases of construction	Vegetation Clearing - Record-keeping	All projects should maintain the required records relating to clearing native vegetation under the purpose permit.	Record: - a copy of the PEIA & EMP (Minor 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
Pre-Construction	Induction / Start-up meeting	Create awareness in all construction personnel of the environmental aspects associated with the project.	All construction staff to be informed of the environmental aspects associated with the project prior to any works being undertaken.	Project Manager	Main Roads
Pre-Construction	Vegetation - Clearing	Ensure that the overall objectives of the 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.	Clearly mark no go areas and any trees or shrubs to be kept.	Project Manager	Main Roads
Construction	Noise, Vibration and Dust	Ensure that the construction of the proposal does not become a nuisance to the public.	Any complaints regarding dust, noise or vibration will be attended to as soon as possible.	Contractor/Project Manager	Main Roads

ENVIRONMENTAL MANAGEMENT PLAN					
Timing	Topic	Objective	Action	Responsible Party	Advice
Construction	Pollution and Litter	Ensure that the works are managed to a standard that minimises pollution or the risk of pollution occurring.	The designated servicing area will be bunded to contain any spills or leaks or will drain into a temporary sump and will not be located in an area adjacent to any drainage areas or watercourses.	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 Project Manager of a spill.	Contractor	Main Roads
			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
			The project areas, including hardstand areas, will be kept in a tidy manner at all times.	Contractor	Main Roads
Construction	Fire	Ensure that the fire risk associated with the construction of the proposal is minimised.	No fires shall be lit within the project area and machinery to be fitted with spark arresting mufflers.	Contractor	Main Roads
Construction	Environmental Incidents	Ensure that any environmental incidents that occur during works do not have a significant or long term impact on the environment.	Implement corrective and preventive actions in liaison with an environmental specialist and Main Roads Manager Environment where necessary.	Contractor/Project Manager	Main Roads
		Record the details of any environmental incidents to fulfil corporate requirements.	Complete and submit environmental incident report forms in accordance with the Main Roads corporate procedure <i>6707/042 Environmental Incident Reporting and Investigation</i> .	Contractor/Project Manager	Main Roads
Post-Construction	Rehabilitation	Leave the project area free from debris.	All waste materials from the development are to be completely removed from the site upon completion of works. Final clean-up shall be to the satisfaction of the Project Manager.	Contractor	Main Roads