



**mainroads**  
WESTERN AUSTRALIA

# Clearing Desktop Report – CPS 818

*We're working for  
Western Australia.*

Deepwater Pit Extension

January 2021

EOS Project #2014

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# Amendments

Report Compilation & Review	Name and Position	Document Revision	Date
Author:	Environment Officer	Draft v1	23/12/2020
Reviewer:	Environment Officer	Draft v1	27/01/2020

## 1 PURPOSE

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

## 2 SCOPE

### 2.1 Project Scope

**Project Name:** Deepwater Pit Extension

**Project Purpose / Components:** Main Roads Western Australia (Main Roads) has identified the requirement to extend the existing Deepwater material pit. The project area is within the town of Port Hedland and is parallel to the Buttsweld road project. The project will require approximately 70 ha of clearing.

**The proposed clearing under CPS 818 is :** 70 ha.

**The proposed temporary clearing under CPS 818 is:** NA.

**Project Location(s):** The project area is located on Buttsweld Rd, within the Town of Port Hedland as shown in Figure 1.

- MGA reference: [redacted]

The location of the proposed works is at Figure 1.

### 2.2 Desktop Assessment Scope

The assessment area is confined to a local area of a 10 km radius, as shown in Figure 2.

**[redacted]**

**Figure 1. Project Area**

**[redacted]**

**Figure 2. Project Location and Study Area**

## **2.3 Alternatives to Clearing**

MRWA are always investigating Sustainable material sources. Clearing will only be conducted as a last option.

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

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

- Large trees will be retained and only large shrubs or small trees will be removed as part of the project activities.
- Main Roads standard dust suppressant measures will be engaged to ensure impacts are mitigated on the adjacent vegetation

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

<b>Design or Management Measure</b>	<b>Discussion and Justification</b>
<b>Steepen batter slopes</b>	NA
<b>Installation of safety barriers</b>	NA
<b>Alignment to one side of existing road</b>	NA
<b>Alternative alignment to follow existing road (or) to preferentially locate within pasture or a degraded areas</b>	NA
<b>Installation of kerbing</b>	NA
<b>Simplification of design to reduce number of lanes and/or complexity of intersections</b>	NA
<b>Preferential use of existing cleared areas for access tracks, construction storage and stockpiling</b>	NA
<b>Drainage modification</b>	NA
	Sustainable (non-clearing) material sources will be used in preference to clearing for material pits.



Design or Management Measure	Discussion and Justification

## 2.5 Approved Policies and Planning Instruments

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

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.3), Main Roads has also had regard to:

### **EPPs**

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

### **Relevant other policies and guidance documents:**

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

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

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

### 3 Methodology

#### 3.1 Desktop Study

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

GIS layer viewing and mapping is done using ArcMap and / or Main Roads Integrated Mapping System (IMS). Referencing of the GIS layers accessed is done under the relevant methodology section of each clearing principle. Government managed databases were searched to locate additional information, these are referenced in Section 7.

## 4 VEGETATION DETAILS

#### 4.1.1 Project Site Vegetation Description

Tables 2 and 3 provide details of the Pre-European Vegetation Associations with the project area and the remaining extents of these associations.

For a full description of the existing vegetation, refer to the Site Inspection Report in Appendix A.

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

Pre-European Vegetation Association(s)	Clearing Description	Vegetation Condition	Comments
Vegetation Association 647 described as Hummock grasslands, dwarf-shrub steppe; <i>Acacia translucens</i> over soft spinifex (Government of Western Australia, 2019)	Clearing of up to 70 ha for rail bridge construction and intersection upgrades.	Very Good (Ecologia 2020)	Vegetation description and condition determined from Ecologia Biological survey 2020.

**Table 3. Pre-European Vegetation Representation**

Pre-European Vegetation Association	Scale	Pre-European (ha)	Current Extent (ha)	% Remaining	% Remaining in DBCA reserves
<b>Veg Assoc No. 647</b>	<b>State wide</b>	195,860.89	191,711.41	97.88	0
	<b>IBRA Bioregion</b> Pilbara	195,859.95	191,710.92	97.88	0
	<b>IBRA Sub-region</b> Pil4 Roebourne	188,901.32	184,774.70	97.82	0
	<b>Local Government Authority</b> TOWN OF PORT HEDLAND	180,908.49	176,759.02	97.71	0

## 5 Assessment Against the Ten Clearing Principles

In assessing whether the project's proposed clearing is likely to have a significant impact on the environment, the project was assessed against the ten Clearing Principles (*Environmental Protection Act 1986* (EP Act), Schedule 5).

Each principle has been assessed in accordance with DWER's 'A Guide to the Assessment of Applications to Clear Native Vegetation'.

The proposed clearing is not likely to be at variance with the 10 Clearing Principles.

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

Comments	Proposed clearing is not likely to be at variance to this Principle
	<p>A biological survey was completed by Ecologia in May 2020. A total of 234 individuals of the Priority 1 taxon <i>Tephrosia rosea</i> var. Port Hedland (A.S. George 1114) were recorded during the current survey, predominantly from disturbed areas. This total is comprised of 92 individuals that were recorded within the survey area, and 142 individuals from immediately adjacent to it. Taking into consideration the individuals found within the biological survey it makes a combined total of 3,379 known individuals known within the broader study which is an impact of 2.7% of the known population. Due to the known presence of <i>Tephrosia rosea</i> var. Port Hedland (A.S. George 1114) locally and the assessment that it is probably a disturbance specialist, it would be unlikely the project will have a significant impact on this species.</p> <p>Desktop searches identified 12 Priority flora potentially occurring within the project area. With the exception of <i>Tephrosia rosea</i> var. Port Hedland (A.S. George 1114), no other Priority flora were recorded in the project area during the targeted survey, and none are considered likely or possible to occur within the project area.</p> <p>This project involves the proposed 70 ha of native vegetation clearing. One introduced plant species (<i>Cenchrus ciliaris</i>) was recorded within the survey area. No Weeds of National Significance or Declared Pests were recorded.</p> <p>One vegetation type was described for the survey area from hierarchical cluster analysis conducted using floristic data from six quadrats: <i>±Grevillea pyramidalis</i> subsp. <i>leucadendron</i> tall sparse shrubland; <i>Acacia stellaticeps</i>, <i>Corchorus lasiocarpus</i> subsp.</p>

	<p><i>parvus</i>, <i>Bonamia erecta</i> mid/low open shrubland; <i>Triodia schinzii</i>, <i>Triodia epactia</i>, <i>Chrysopogon fallax</i> low hummock grassland/tussock grassland.</p> <p>The project area is mapped as Beard Vegetation Association 647 described as Hummock grasslands, dwarf-shrub steppe; <i>Acacia translucens</i> over soft spinifex (Government of Western Australia, 2019). This vegetation association is not restricted within the Pilbara IBRA Bioregion, and is not considered to be locally or regionally significant (Ecologia, 2020).</p> <p>No State or Commonwealth listed TECs or PECs have been recorded within or in the vicinity of the project area. The vegetation type (SH01) recorded within the project area does not correspond to any known TEC or PEC, nor is it considered to be locally restricted (Ecologia, 2020).</p> <p>Sandy plains were the only habitat type recorded within the project area and the condition rating was classed at the lower rating of Good due to the presence of introduced animals (i.e. feral cats) and more obvious signs of damage caused by the activities of modern humans. This habitat is extensive within the surrounding area (ecologia 2020).</p> <p>A total of nine vertebrate species were recorded including one feral mammal (feral cat) and eight birds. No EPBC Act listed Threatened fauna or DBCA listed Priority species were recorded during the survey. The close proximity of the project area to residential and industrial lots increases the chance of feral cat predation and may limit the persistence of conservation significant fauna (ecologia 2020).</p> <p>The native vegetation within the project area does not comprise a high level of biological diversity and is comparable to the surrounding vegetation. The project area does not contain vegetation that is considered to be locally or regionally significant. The proposed clearing of 70 ha is unlikely to be at variance to this principle.</p>
<b>Methodology</b>	<p>Ecologia (2020)</p> <p>GIS Database:</p> <ul style="list-style-type: none"> <li>- IBRA Australia</li> <li>- Pre-European Vegetation</li> <li>- Threatened and Priority Flora</li> <li>- Threatened and Priority Ecological Communities Buffered</li> <li>- Threatened and Priority Fauna</li> </ul> <p>NatureMap (Accessed 23/12/20)</p>

**(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.**

<b>Comments</b>	<b>Proposed clearing is not likely to be at variance to this Principle</b>
	<p>Sandy plains were the only fauna habitat type recorded within the project area and the condition rating was classed at the lower rating of Good due to the presence of introduced animals (i.e. feral cats) and more obvious signs of damage caused by the activities of modern humans. This habitat is extensive within the surrounding area (ecologia 2020).</p> <p>Sixty-four vertebrate fauna species of conservation significance were returned from DBCA Threatened and Priority Fauna database searches including 44 migratory birds protected under international agreement, four non-migratory birds, eleven mammals, and five reptiles. Twenty-nine threatened species and 60 migratory species were identified from the EPBC Act Protected Matters Search Tool.</p> <p>Due to the large desktop survey area of 40 km, and the associated proximity of coastal, estuarine, marine and oceanic habitats, a large number of species have no relevance to the study area and have been omitted from the assessment. Furthermore, numerous coastal, wetland and saltmarsh migratory bird species were listed in the searches that would not occur in the sand plain habitats present.</p>

	<p>No conservation significant fauna were recorded during the field survey. A likelihood of occurrence assessment identified one species as likely to occur and two species as possibly occurring within the project area post-survey. The remaining 56 species were deemed unlikely to occur in the project area.</p> <p><b>Brush-tailed Mulgara (<i>Dasyercus blythi</i>) (P4)</b> Database search results returned a total of 220 records of this species and the Sandy Plain habitat type provides habitat for this species within the project area. The Brush-tailed Mulgara was considered likely to occur in the project area, however, the proximity of the project area to roads, housing and industrial estates and the presence of feral cats may restrict this species from persisting within the project area (ecologia 2020).</p> <p><b>Bilby (<i>Macrotis lagotis</i>) (VU EPBC Act and BC Act)</b> Bilbies occur in a variety of habitats, usually on landforms with level to low slope topography with light to medium soils, and typically sandy, for burrow excavation. The Sandy Plain habitat types provides suitable habitat. The Bilby was considered to possibly occur in the project area, however, the proximity of the project area to town and the presence of feral cats may restrict this species from persisting within the project area (ecologia 2020).</p> <p><b>Fork-tailed Swift (<i>Apus pacificus</i>) (Migratory EPBC Act and BC Act)</b> The Fork-tailed Swift is a migratory, almost exclusively aerial species that, in its non-breeding area in Australia, is independent of terrestrial habitats. The Fork-tailed Swift has been recorded once within the study area and is considered to possibly occur within the project area. The species has the potential overfly the entire project area without specifically utilising any particular habitat present (ecologia 2020).</p> <p>The project is unlikely to clear habitat which comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for any of fauna species. The vegetation within the project area is fragmented and degraded due to urban development, feral species and lineal infrastructure. There is fauna habitat in similar or better condition in the local and regional area, and fauna species present are likely to move to more appropriate habitat elsewhere.</p>
<b>Methodology</b>	<p>DBCA Shapefiles - Threatened and Priority Fauna DBCA website Ecologia (2020)</p>

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

<b>Comments</b>	<b>Proposal is not at variance to this Principle</b>
	<p>There are no known records of Threatened flora within the study area (GIS Database). Detailed flora surveys of the project area did not record any species of Threatened flora (Ecologia, 2019). No Threatened flora were considered likely to occur within the project area (ecologia 2020).</p> <p>Based on the above, the proposed clearing is not at variance to this Principle.</p>
<b>Methodology</b>	<p>DBCA shapefiles Ecologia (2020) FloraBase (Accessed 23/12/20)</p>

**(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.**

<b>Comments</b>	<b>Proposed clearing is not at variance to this Principle</b>
	<p>There are no known Threatened Ecological Communities (TECs) located within or in close proximity to the project area (GIS Database). The closest TEC record is Eighty Mile approximately 53 kilometres North/East.</p> <p>A flora and vegetation survey of the project area did not identify any TECs (ecologia 2020).</p> <p>Based on the above, the proposed clearing is not at variance to this Principle.</p>
<b>Methodology</b>	<p>DBCA shapefiles</p> <p>Ecologia (2020)</p>

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

Comments	Proposed clearing is not at variance to this Principle																						
	<p>The project area falls within the Pilbara Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 98% of the pre-European vegetation still exists in the IBRA Pilbara Bioregion (Government of Western Australia, 2019). The project area is broadly mapped as Beard vegetation association 647: described as Hummock grasslands, dwarf-shrub steppe; <i>Acacia translucens</i> over soft spinifex (GIS Database). There is greater than 97% of the pre-European extent of vegetation association 647 remaining at the state, bioregional, subregional and Local Government Area levels (Government of Western Australia, 2019).</p> <p>The project area does not represent a significant remnant of native vegetation in an area that has been extensively cleared. Based on the above, the proposed clearing is not at variance to this Principle.</p> <table><tr><th>Pre-European Vegetation Association</th><th>Scale:</th><th>Pre-European (ha)</th><th>Current Extent (ha)</th><th>% Remaining</th></tr><tr><td rowspan="4">Veg Assoc No. 647</td><td>Statewide</td><td>195,860.89</td><td>191,711.41</td><td>97.88</td></tr><tr><td>IBRA Bioregion Pilbara</td><td>195,859.95</td><td>191,710.92</td><td>97.88</td></tr><tr><td>IBRA Sub-region Pil4 Roebourne</td><td>188,901.32</td><td>184,774.70</td><td>97.82</td></tr><tr><td>Local Government Authority TOWN OF PORT HEDLAND</td><td>180,908.49</td><td>176,759.02</td><td>97.71</td></tr></table>	Pre-European Vegetation Association	Scale:	Pre-European (ha)	Current Extent (ha)	% Remaining	Veg Assoc No. 647	Statewide	195,860.89	191,711.41	97.88	IBRA Bioregion Pilbara	195,859.95	191,710.92	97.88	IBRA Sub-region Pil4 Roebourne	188,901.32	184,774.70	97.82	Local Government Authority TOWN OF PORT HEDLAND	180,908.49	176,759.02	97.71
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Methodology	Ecologia (2020) Government of Western Australia (2019)																						



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

<b>Comments</b>	<b>Proposed clearing is not at variance to this Principle</b>
	<p>There are no watercourses or wetlands within the project area (GIS Database). The flora and vegetation survey did not identify any vegetation that grows in association with a watercourse or wetland (ecologia 2020).</p> <p>Based on the above, the proposed clearing is not at variance to this Principle.</p>
<b>Methodology</b>	<p>DWER and DBCA shapefiles</p> <p>Ecologia (2020)</p>

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

<b>Comments</b>	<b>Proposed clearing is not likely to be at variance to this Principle</b>
	<p>The project area lies within the Uaroo land system (GIS Database). This land system has been mapped and described in technical bulletins produced by the former Department of Agriculture (now the Department of Primary Industries and Regional Development).</p> <p>The Uaroo land system is described as broad sandy plains, pebbly plains and drainage tracts supporting hard and soft spinifex hummock grasslands with scattered acacia shrubs. This land system is not generally susceptible to erosion and is also categorised as having extremely low probability of Acid Sulphate soils.</p> <p>The proposed clearing of up to 70 hectares of native vegetation for the purpose of material pit is unlikely to cause appreciable land degradation.</p> <p>Based on the above, the proposed clearing is not likely to be at variance to this Principle.</p>
<b>Methodology</b>	<p>Ecologia (2020)</p> <p>GIS Database:</p> <ul style="list-style-type: none"> <li>- Landsystem Rangelands</li> <li>- Soils, Statewide</li> </ul> <p>Van Vreeswyk et al. (2004)</p>

**(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.**

<b>Comments</b>	<b>Proposed clearing is not at variance to this Principle</b>
	<p>There are no conservation areas in the vicinity of the application area. The nearest DBCA (formerly DPaW) managed land is the Mungaroona Range Nature Reserve which is located approximately 110 km south of the project area (GIS Database). The proposed clearing is unlikely to impact on the environmental values of this or any other conservation area.</p> <p>Based on the above, the proposed clearing is not at variance to this Principle.</p>
<b>Methodology</b>	<p>DBCA shapefiles</p> <p>Ecologia (2020)</p>

**(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.**

<b>Comments</b>	<b>Proposed clearing is not likely to be at variance to this Principle</b>
	<p>There are no Public Drinking Water Source Areas within or in close proximity to the project area, with the closest being 35 km to the east (GIS Database). There are no permanent watercourses or wetlands within the project area (GIS Database). Creek lines in the region are dry for most of the year, only flowing briefly immediately following significant rainfall. The proposed clearing is unlikely to result in significant changes to surface water flows.</p> <p>The proposed clearing is unlikely to cause deterioration in the quality of underground water.</p> <p>Based on the above, the proposed clearing is not likely to be at variance to this Principle.</p>
<b>Methodology</b>	DWER and DBCA shapefiles Ecologia (2020)

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

<b>Comments</b>	<b>Proposed clearing is not likely to be at variance to this Principle</b>
	<p>The climate of the region is arid, with a low average rainfall of approximately 319 millimetres per year (BOM, 2020). Drainage lines in the area are dry for most of the year, only flowing briefly immediately following significant rainfall (BOM 2020).</p> <p>There are no permanent watercourses or waterbodies within the project area (GIS Database). Clearing within the project area is unlikely to cause or exacerbate the incidence or intensity of flooding.</p> <p>Based on the above, the proposed clearing is not likely to be at variance to this Principle.</p>
<b>Methodology</b>	BOM (2020) DWER shapefiles

## 6 ADDITIONAL ACTIONS REQUIRED

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

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

Impact of Clearing	Yes/No or NA	Further Action Required
<b>1.</b> The project involves clearing for temporary works (as defined by CPS 818).	<b>No</b>	No further action required.
<b>2 a.</b> Project is within Region that: <ul style="list-style-type: none"> <li>- Has rainfall greater than 400mm and</li> <li>- Is South of the 26<sup>th</sup> parallel and</li> <li>- Works are in 'Other than dry conditions' and</li> <li>- Works have potential for <b>uninfested</b> areas to be impacted</li> </ul>	<b>No</b>	No further action required.
<b>3.</b> Main Roads has been notified by DWER or an environmental specialist that the area to be cleared is susceptible to a pathogen other than dieback	<b>No</b>	No further action required.
<b>4.</b> The vegetation within the area to be cleared and/or the surrounding vegetation in a good or better condition and weeds likely to spread to and result in environmental harm to adjacent areas of native vegetation that are in good or better condition	<b>No</b>	No further action required.

## 7 VEGETATION MANAGEMENT

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

## 8 REFERENCES

Bureau of Meteorology Australia. (2020). Climate Averages for Australian Sites – Port Headland Airport – Available online from <http://www.bom.gov.au/climate/data/index.shtml> Accessed 23/12/2020

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Government of Western Australia. (2019). 2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of December 2017. WA Department of Biodiversity, Conservation and Attractions, Perth. Available online from: <https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics>

Ecologia. (2020). Main Roads Western Australia DEEPWATER MATERIAL PIT EXTENSION Biological Survey, Ecologia Environment (23/12/2020).

Natural Resource Management in WA. (2019). SLIP portal, Soil-Landscape Mapping. Available online from: <http://maps.agric.wa.gov.au/nrminfo/framesetup.asp>. Accessed 23/12/2020.

Van Vreeswyk, A.M.E., Payne, A.L., Hennig, P., and Leighton, K.A. (2004) An Inventory and Condition Survey of the Pilbara Region, Western Australia. Department of Agriculture, Western Australia.

Western Australian Herbarium. 1998- *FloraBase* - The Western Australian Flora. Department of Biodiversity, Conservation and Attractions. Available online from: <https://florabase.dpaw.wa.gov.au/> Accessed 23/12/2020.

## 9 APPENDICES

Appendix	Title
<b>Appendix 1</b>	Biological Survey
<b>Appendix 2</b>	DBCA Threatened Flora and Fauna Database Searches

## **Appendix 1: Biological Survey**

Rev2\_1833\_MRWA\_Deepwater Material Pit Extension\_Biological Survey  
<https://TrimWebDrawer.mrwa.wa.gov.au/WebDrawer/record/13521494>

D20#601716

## Appendix 2: DBCA Threatened Flora and Fauna Database Searches

*[redacted]*