



## 1. Application details

### 1.1. Permit application details

Permit application No.: 774/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Ronald & Michele Burford

### 1.3. Property details

Property: E59/1168  
Local Government Area: Shire Of Dalwallinu & Shire Of Perenjori  
Colloquial name:

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
7		Mechanical Removal	Mineral Exploration

## 2. Site Information

### 2.1. Existing environment and information

#### 2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
<p>Beard Vegetation Types (from Shepherd et al. 2001):</p> <p>141: Medium Woodland; Yorkgum, Salmon Gum &amp; Gimlet. 352: Medium Woodland; Yorkgum. 437: Shublands; Mixed Acacia thicket on sandplain.</p> <p>The vegetation formations were described in more detail following a flora survey by Greening Australia (2006). Two vegetation formation types were described:</p> <p>The predominant vegetation formation was: Closed Shrubland complex with dense to very dense 1.5 - 5m tall shrubs, mostly Acacia spp., Hakea spp., Melaleuca spp., and <i>Allocasuarina campestris</i>.</p> <p>The second most widespread vegetation type recorded was York Gum <i>Eucalyptus loxophleba</i> woodland which typically ranged from 5 to 8 m tall, the understorey varied from sparse to dense with dominant species including Jam <i>Acacia acuminata</i>, Melaleuca</p>	<p>The vegetation is to be cleared by a skidsteer loader with raised blade clearing where possible and using some existing tracks for the purposes of clearing three exploration access tracks with a total length of 18 kilometres and a maximum width of 3.3 metres.</p>	<p>Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994)</p> <p>To</p> <p>Pristine: No obvious signs of disturbance (Keighery 1994)</p>	<p>The vegetation condition was described as Excellent to Pristine (Keighery 1994 vegetation Condition Scale) by the Greening Australia Consultant who undertook the flora survey of the proposed exploration tracks (Franks pers comm. 16/01/2006). The vegetation in the area has been affected by a recent (less than five years) major bushfire with many species resprouting or coppicing from their bases (Greening Australia 2005).</p>

spp., and occasional  
*Callitris glaucophylla*.

### 3. 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 at variance to this Principle**

The proposed clearing areas are situated within the Avon Wheatbelt (P1) Interim Bioregionalisation of Australia (IBRA) subregion (GIS Database 2000). The biodiversity values of that subregion were described by Beecham (2001). No known special values in relation to landscape, ecosystems, species or genetic values are mentioned in that assessment for the proposed clearing areas or the ecosystems found in those areas.

A biological survey of the White Wells area has revealed an area of diverse fauna and flora with elements of both the wheatbelt and Eramean flora being present (CALM 1988). On the basis of the high diversity of taxa found and the lack of representation in the existing conservation reserves the Department of Conservation and Land Management requested that the land be set aside as an 'A' class Nature Reserve in 1988 (CALM 1988).

The high biodiversity found in the area has been further documented since by biological surveys conducted within two pastoral leases managed for conservation purposes by not for profit organisations in the local area. The north western part of the proposed exploration track lies within Charles Darwin Reserve (ex White Wells Station) managed by the Australian Bush Heritage Fund. The Mt Gibson Station (managed by the Australian Wildlife Conservancy) boundary is located approximately 3 kilometres east of the south eastern proposed exploration track.

Based on the above information the proposal is judged at variance to this principle.

**Methodology**    Beecham (2001).  
CALM (1988).  
GIS Database-IBRA subregions-EA 18/10/2000.

#### (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 at variance to this Principle**

No fauna assessment was provided by the proponent for this proposal. Based on previous surveys and known records the area is potentially used by a number of species listed in the Wildlife Conservation (Specially Protected Fauna) Notice 2005 or listed on CALM's own priority fauna list.

The closest known scheduled fauna species record under the Wildlife Conservation (Specially Protected Fauna) Notice 2005 is for the Shield-backed Trapdoor Spider *Idiosoma nigrum* (Schedule 1, Fauna that is rare/likely to become extinct, vulnerable). Those records are approximately 18 kilometres to the north east of the areas proposed to be cleared (CALM 2006). CALM (2006) advice provided in relation to this proposal states that *Idiosoma nigrum* is historically distributed widely across the South West land division in dry sclerophyll woodlands with sparse litter and heavy clay soils, with most records being found in the central wheatbelt agricultural area although records extend to the east in the Paynes Find area. According to a review of conservation status of selected Australian Non Marine Invertebrates (Clark and Spiers-Ashcroft 2003) the main threat to *I nigrum* and the other trapdoor spiders in the Wheatbelt is habitat fragmentation, grazing, soil compaction via vehicle movement and habitat alteration. Based on its known broad distribution across the WA Wheatbelt there is the possibility of this taxon inhabiting the area under application; however without further study it is difficult to ascertain the potential risk associated with the proposal.

There are also a large number of records for the Malleefowl *Leipoa ocellata* (Schedule 1, Fauna that is rare/likely to become extinct, vulnerable) approximately 25 kilometres to the north east and 20 kilometres to the west of the proposed clearing (CALM 2006). This species has been recorded in the thicket vegetation which covers approximately 30% of the White Wells Vacant Crown Land (DEH, 2000).

The Mallee Fowl is a large ground dwelling bird that incubates its eggs in large conspicuous mounds made up of litter and soil. No mounds were observed within the areas proposed to be cleared by the consultant undertaking the flora survey (Andrew Franks pers comm. 2006). However an old mound was found in the general vicinity of the areas proposed to be cleared (Andrew Franks pers comm. 2006). It is likely that Malleefowl are present in the areas proposed to be cleared.

Known threats to that species are listed in Garnett and Crowley (2000) as agricultural land clearing resulting in habitat fragmentation, changed fire regimes, European Fox *Vulpes vulpes*, predation and starvation due to competition with introduced stock, goats, rabbits and unnaturally high numbers of kangaroos. It is unlikely that the clearing of the vegetation itself will lead to a substantial loss of Malleefowl habitat. The potential impacts on Malleefowl may be increased predation due to new tracks and easier predator (Foxes and Cats) access being

created. Other potential impacts are the increased risk of bushfires and spread of weeds from increased access which may affect the quality of Malleefowl habitat in the long term. Domestic dogs may also pose a threat to Malleefowl if brought on site in the course of the proposed activities (Warnock pers comm. 2006). The Mallee Fowl is also listed as vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act 1999).

A number of records for the Western Spiny-tailed Skink *Egernia stokesii badia* (Schedule 1, Fauna that is rare/likely to become extinct, vulnerable) are listed approximately 30 kilometres to the west (CALM 2006) as well as approximately 35 kilometres to the north of the proposed clearing areas, south of Rothsay (How et al. 2003). In Western Australia, many of the mainland populations have apparently disappeared over the last 25 years (Greer 2005). Further surveys have located populations near Yalgoo, Perenjori and Kalannie (DEH 2006). To date the Western Spiny-tailed Skink has not been recorded at White Wells or Mt Gibson Station despite specific surveys for that species (Jacqueline Richards pers comm. 2006). The typical habitat is listed as York Gum (*Eucalyptus loxophleba*) woodland with higher densities of Western Spiny Tailed Skinks found in sites with numerous fallen logs and showing a low grazing intensity by domestic stock (DEH 2006). Hollow logs over 25 centimetres in diameter or rock crevices are listed as a requirement for refuge sites in woodland habitat (How et al. 2003, Greer 2005, DEH 2006). The proposed clearing does include areas of York Gum woodland which are not likely to be grazed by domestic stock as both adjoining pastoral leases have had their stock numbers reduced in recent years (Jacqueline Richards pers comm. 2006). Photographs provided by the proponent show that some of those areas do have large amounts of logs on the ground and appear to be suitable habitat for the Western Spiny-tailed Skink species (John Dell pers comm. 2006).

Records for the Major Mitchell Cockatoo *Cacatua leadbeteri mollis* (Other Specially Protected Fauna, Schedule 4) exist approximately 30 kilometres to the west of the proposed clearing areas (CALM 2006).

The Major Mitchell Cockatoo is dependant on tree hollows including large Mallee Eucalypts (Pizzey and Knight 1997) for nesting and may be affected if the proposal results in the removal of hollow bearing trees. The majority of hollows used by wildlife in the Wheat belt occur in Wandoo *Eucalyptus wandoo* or Salmon Gums *Eucalyptus salmonophloia* (Rose 1993). Given the lack of those two tree species in the areas proposed to be cleared (the dominant trees are York Gum *Eucalyptus loxophleba*) the proposal is unlikely to have an impact on tree hollow availability. Furthermore, the proponent has indicated that no trees will be cleared as a result of the activities proposed. Major Mitchell Cockatoos are known to forage in the White Wells/Mt Gibson area on Callitris pine (Warnock pers comm. 2006) which has been recorded as occurring occasionally in the understorey of the York Gum Woodland vegetation complex described within the areas to be cleared by Franks (2006). It is possible that the proposed activity will have some impact on a foraging resource that is significant to Major Mitchell Cockatoos in the area.

Other CALM priority listed bird species records exist approximately 30 kilometres to the west of the proposed clearing for the Crested Bellbird southern subspecies *Oreoica gutturalis gutturalis* (P4) and White Browed Babbler *Pomatostomus superciliosus ashbyi* (P4). Known threats to the Crested Bellbird and White Browed Babbler include agricultural land clearing resulting in habitat fragmentation with the White Browed Babbler being less affected than the Crested Bellbird. Based on the type of clearing and the large areas of surrounding bushland the proposal is unlikely to be significant to those 2 species provided that rehabilitation of the cleared areas takes place.

A number of fauna species of conservation significance (under the *EPBC Act 1999* or *WA Wildlife Conservation Notice 2005* have also been recorded from nearby Mt Gibson Station managed by the Australian Wildlife Conservancy (Jacqueline Richards pers comm.). Those species are: Peregrine Falcon *Falco peregrinus* (Schedule 4), Major Mitchell Cockatoo, Malleefowl and Hooded Plover *Thinornis rubricollis tregellasi* (P4). Based on their habitat requirements, known threats and the scale of the proposal the Peregrine Falcon and Hooded Plover are unlikely to be affected by the proposed exploration activities and associated track clearing.

The proposal is judged at variance to principle b because of the potential impacts outlined above to the Malleefowl, Major Mitchell Cockatoo and Western Spiny-tailed Skink which are likely to be present in the area.

**Methodology** CALM (2006).  
Clark and Spiers-Ashcroft (2003).  
DEH (2006).  
Frank (2006).  
Garnett & Crowley (2000).  
GIS Database-Threatened Fauna-CALM 30/9/2005.  
Greer (2005).  
How et al. (2003).  
Pizzey and Knight (1997).  
Rose (1993).

**(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**  
Following concerns expressed to the proponent by CALM and DoIR regarding the possibility of Declared Rare

or Priority Flora being present in the area and the lack of adequate survey information, a flora survey focussing specifically on the presence of Declared Rare Flora and Priority Flora was conducted along the proposed exploration tracks between 12 and 14 December 2005 (Franks 2006). A 10 metre wide band was surveyed along the length of the three proposed tracks (Franks 2006). Four priority species were recorded in the vicinity of the areas surveyed. These were: *Acacia cerastes* (P1), *Acacia inceana* subsp *latifolia* (P1), *Euryomyrtus recurva* (P3) and *Philotheca nutans* (P1). No Declared or Priority Flora species were recorded within the areas surveyed. The timing of the survey is listed as a negligible constraint with regards to the quality of the information collected despite the fact that the peak flowering period had passed and many annual species might have been missed (Franks 2006). Further information was passed from the consultant to CALM to improve the accuracy of the information provided. Based on the level of information provided and the nature of the proposal CALM was satisfied that the proposal is unlikely to significantly impact DRF or Priority Flora in the areas proposed to be cleared (Ken Atkins pers comm. 2006).

The closest known population of a Priority or Declared Rare Flora in the vicinity of the proposed tracks is a population of *Euryomyrtus recurva* located approximately 1.3 kilometres from one of the proposed tracks (Franks 2006).

Considering the intensity of the survey carried out and that the timing of the survey was judged a negligible constraint it is unlikely that any Declared Rare or Priority Flora species occur within the areas proposed to be cleared.

**Methodology** Franks (2006).  
GIS Database-Declared and Priority Flora Species-CALM 2005.

**(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.**

**Comments Proposal is not likely to be at variance to this Principle**

The closest known Threatened Ecological Community is situated approximately 74 kilometres to the North West of the proposed clearing (GIS Database 2005).

There are no known Threatened Ecological Communities within the two pastoral leases managed for conservation (Charles Darwin Reserve and Mount Gibson station) near the proposed clearing permit area (GIS Database 2005).

**Methodology** GIS Database-Threatened Ecological Communities- CALM 12/04/05.

**(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 at variance to this Principle**

Pre-European	Current area (ha)	Remaining extent (ha)	%*	Status**	% in Conservation reserves/CALM-managed land
IBRA Subregion AW1	6,566,023*	1,307,487*	19.9%	Vulnerable	8.2%
Shire of Perenjori	833,844	723,681	58.5%	Least concern	Not available
Shire of Dalwallinu	488,089	199,491	27.5%	Vulnerable	Not available
Beard vegetation associations					
- 141	676,791	250,256	37%	Depleted	5.8%
- 352	874,652	133,255	15.2%	Vulnerable	3.0%
- 437	415,944	346,177	83.2%	Least concern	20.5%

\* Shepherd et al. (2001)

\*\* Department of Natural Resources and Environment (2002)

Options to select from: Bioregional Conservation Status of Ecological Vegetation Classes (Department of Natural Resources and Environment 2002)

Presumed extinct Probably no longer present in the bioregion

Endangered\* <10% of pre-European extent remains

Vulnerable\* 10-30% of pre-European extent exists

Depleted\* >30% and up to 50% of pre-European extent exists

Least concern >50% pre-European extent exists and subject to little or no degradation over a majority of this area

\* or a combination of depletion, loss of quality, current threats and rarity gives a comparable status

The Beard Vegetation Associations were described at a very large scale (1:250 000) and this data has limitations when looking at its interpretation over small areas. There is a discrepancy in the Beard Vegetation Mapping data in

that Associations 141 and 352 occur within the areas proposed to be cleared and are separated by a straight north south line which does not represent the natural boundaries of those vegetation types. Type 141 Beard Vegetation Association is described as Medium Woodland; Yorkgum, salmon Gum and Gimlet (Shepherd et al. 2001) however neither Salmon Gums nor Gimlet were described within the areas proposed to be cleared (Franks 2006). Based on the above The Beard Vegetation Association 141 proposed to be cleared is more likely to be akin to Beard Vegetation Association 352 (Medium Woodland; York Gum).

Approximately 11 kilometres of track go through Beard Vegetation Type 437 and 7 kilometres go through Beard Vegetation Type 141/352. Less than 30% of Beard Vegetation type 352 remains and the clearing is considered at variance for this Beard Vegetation type.

**Methodology** Department of Natural Resources and Environment (2002).  
Franks (2006).  
Shepherd 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 associated with this permit application (GIS Database 2004). No changes to groundwater levels are expected due to the small area proposed to be cleared.

**Methodology** GIS Database- Hydrography, linear- DoE 1/2/04 (Hyd-Type).

**(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 is characterised by low relief (Australian Bush Heritage Fund 2006) with gradients between 0 and 2 % (GIS Database 2002). The soil types are mostly sand to sandy loams with a small area of clay loam (Franks 2006).

CALM advice received in relation to this proposal states that through the formation of access tracks the proposal has the potential to alter localised drainage patterns by intercepting water flow and channelling it, thus causing erosion and water starvation to adjacent vegetation. While some rolling or raking of vegetation might be necessary to prevent tyre staking of exploration equipment, under no circumstances should depressing the surface and the creation of windrows be permitted as this will break up the algal lichen crust, divert water and cause permanent damage. CALM recommends that a condition of permit that exploration be undertaken in dry soil conditions and no permanent tracks are to be created as a result of this proposal.

Wind erosion is unlikely to occur given that a narrow track will be cleared and that it will be sheltered by the surrounding vegetation.

Due to the small scale of the proposed clearing water logging nor salinisation are likely to be increased as a result of the proposed clearing.

**Methodology** Australian Bush Heritage Fund (2006).  
CALM (2006).  
Franks (2006).  
GIS Database-Topographic Contours, Statewide-DOLA 12/09/2002.

**(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 at variance to this Principle**

The area to be cleared is situated in part within a proposed CALM A Class Nature Reserve as well as a pastoral lease (White Wells) managed for conservation by the Australian Bush Heritage Fund. The Australian Bush Heritage Fund has recently renamed White Wells Charles Darwin Reserve. The proposed A Class Nature Reserve forms a link between White Wells/Charles Darwin Reserve acquired by Australian Bush Heritage Fund in 2003 and Mt Gibson Station acquired by the Australian Wildlife Conservancy in 2001. Both of those adjoining pastoral leases are managed for conservation purposes and are part of the National Reserve System (DEH 2003).

The proposed activity is likely to result in negative impacts on the conservation values of the proposed A Class Reserve and White Wells Station/Charles Darwin Reserve due to the increased risk of weed introduction, bushfires and other disturbances resulting from easier access.

**Methodology** Department of Heritage (2003).

**(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**

There are no watercourses or wetlands associated with this permit application (GIS Database 2004). No changes to groundwater or surface water levels or quality are expected due to the small area proposed to be cleared and lack of watercourses in the area.

**Methodology** GIS Database-Hydrography, linear- DoE 1/2/04.

**(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**

Because of the lack of watercourses in the vicinity of the clearing area (GIS Database 2004) and the small area being cleared the proposal is unlikely to exacerbate flooding.

**Methodology** GIS Database- Hydrography, linear-DoE (1/2/04).

**Planning instrument, Native Title, Previous EPA decision or other matter.**

**Comments**

The permit was initially applied as an area permit and advertised as such on the 8 August 2005. Area permits are not valid over exploration licences as the proponent is not the owner of the land. The matter was raised with the applicant by the DoIR assessor and a letter requesting that the permit be amended to a purpose permit for the purpose of mineral exploration was received by DoIR on 9 September 2005. The permit was amended on the 9 September 2005 in accordance with section 51K (1e) of the *Environmental Protection Act 1986* which allows for amendments due to clerical mistake or unintentional error or omission.

A submission from the Shire of Dalwallinu was received on 26 August 2005. No objections were raised.

A submission was received on the 26 August and further amended on the 29 of August 2005. The submission objected to the clearing based on environmental grounds. The same submission proposed some measures to mitigate the environmental impact of the clearing if the clearing permit is granted.

There is a Native Title Claim over the area under application by the Badimia People (GIS Database 19/12/04). However, the exploration lease has been granted, and the clearing is for a purpose consistent with the lease, therefore the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

Under the terms of the Memorandum of Understanding between the EPA and DoIR, exploration proposals that are partly or within a CALM proposed Reserve may be referred to the EPA if DoIR is advised to do so by CALM. CALM email advice received on the 1/02/06 stated that: there are potential risks in terms of the ability of the proponent to manage the environmental impacts associated with the exploration activity, provided that suitable conditions and guidance are put in place this permit is unlikely to require referral to the EPA for assessment.

CALM have indicated in email advice received by the DoIR assessor on 22 March 2006 that the conditions set for this permit address the concerns raised previously by CALM's clearing assessment unit (CALM 2006).

The proposed exploration work is taking place on the following tenement: Exploration Licence No 59/1168. There is a requirement under the *Mining Act 1978* that 15 conditions of that licence be addressed prior to approval being granted under the *Mining Act 1978*. Conditions 11 to 15 apply specifically to the proposed CALM reserve and request that a detailed environmental management plan be submitted to the Director, Environment, DoIR. The director Environment DoIR is to consult with the Regional/District manager, Department of Conservation and Land Management prior to the approval to use mechanised machinery on the ground being granted by DoIR.

**Methodology** GIS Database-Native Title Claims-DLI (19/12/04).

**4. Assessor's recommendations**

Purpose	Method	Applied area (ha)/ trees	Decision	Comment / recommendation
Mineral Exploration	Mechanical Removal	7	Grant	The proposal is judged not likely to be at variance to principles c, d, f, i and j.  The proposal may be at variance to principle g. The Department of Conservation and Land Management has requested that a condition be imposed to restrict the clearing to dry soil conditions. Such a condition has been set for this permit.  The proposal is at variance to principle a, b, e and h.

Whilst the proposal is located in an area high in biodiversity (principle a) the impacts of the proposed clearing will be of a temporary nature and can be managed by standard rehabilitation practices that are applied to all exploration activities as a requirement of the *Mining Act 1978*. The assessor has imposed conditions on the permit to minimise the risk of introducing weeds to the area and of unauthorised access occurring. Rehabilitation is to take place within a relatively short timeframe following the proposed activities.

The proposal is at variance to principle b because of potential impacts to 3 Scheduled fauna species. The assessor has imposed conditions to avoid or manage potential impacts to scheduled wildlife.

With respect to the Malleefowl, a condition has been imposed to request that the permit holder or persons engaged by the permit holder not bring domestic dogs to the permit area for the duration of the proposed clearing and associated exploration activities.

With respect to the potential disturbance to the Major Mitchell Cockatoo, the permit holder is requested to avoid clearing *Callitris* pines where they occur in the permit area.

With respect to potential disturbance to *Egernia Stokesii badia* the permit holder is requested to avoid disturbing log piles and fallen logs with a diameter greater than 25 centimetres in the permit area.

The proposal is at variance to principle e; however rehabilitation is to take place under the tenement conditions agreed upon by the permit holder under the *Mining Act 1978*. The proposal will result in a temporary and not permanent loss of vegetation following rehabilitation.

The proposal is at variance to principle h because of the potential impacts to the conservation values of Charles Darwin Reserve and the proposed CALM A Class Nature Reserve. Those impacts will be minimised by the conditions imposed under this permit to lower the risk of new weeds being introduced in the area and to restrict access from the Great Northern Highway.

With respect to managing unauthorised access a condition has been set to request that: no clearing is to take place within 100 metres of the Great northern Highway. The proponent has indicated that existing access tracks can be used to gain access and avoid clearing near the Great Northern Highway. The proponent also proposes to put in locked gates and signs to deter unauthorised access of the proposed exploration tracks. The permit holder is to consult with the Charles Darwin Reserve Manager prior to commencing clearing.

## 5. References

- Australian Bush Heritage Fund (2006), Information on Charles Darwin Reserve from the Australian Bush Heritage Fund web site, <http://www1.bushheritage.asn.au/default.aspx>, accessed 10/2/2006.
- CALM (1988) Letter dated 26th August 1988, from Syd Shea, the Executive Director of CALM to the Executive Director of the Department of Land Administration to request the setting aside of the Vacant Crown Land of the White Wells area as an 'A' class reserve for the conservation of flora and fauna vested in the National Parks and Nature Conservation Authority.
- CALM (2006) Email advice given by CALM's Environmental Assessment Branch to DoIR's Native Vegetation Branch in relation to the assessment of the clearing principles for Clearing Permit 774/1.
- Clark G.M and Spiers-Ashcroft F (2003) A review of the conservation status of selected Australian non-marine invertebrates [electronic resource] Environment Australia, Canberra.
- Department of Environment and Heritage (2000). White Wells Vacant Crown Land, Great Northern Highway, Jibberding, WA Register of National Estate. Department of the Environment and Heritage, Canberra. Available from <http://www.deh.gov.au/heritage/ahdb>. Accessed 28/08/2005.
- Department of Heritage (2003). Annual Report 2002-2003. Review of Performance National Reserve System Program. <http://www.deh.gov.au/about/annual-report/02-03/outcome-1-parks.html>
- Department of Environment and Heritage (2006). *Egernia stokesii badia* in Species Profile and Threats Database, Department of the Environment and Heritage, Canberra. Available from <http://www.deh.gov.au/sprat>. Accessed 9/2/2006.
- Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity

- at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.
- EPA (2000) Environmental protection of native vegetation in Western Australia. Clearing of native vegetation, with particular reference to the agricultural area. Position Statement No. 2. December 2000. Environmental Protection Authority.
- Franks A.J. (2006) Flora and Vegetation Survey White Wells/Mt Gibson Area. Unpublished report prepared by Andrew J Franks, Environmental Services Unit, Greening Australia (WA) for Mr RL Burford, dated January 2006.
- Garnett S.T. & Crowley G.M. (2000) The Action Plan for Australian Birds. Environment Australia.
- Greer, A.E. 2005. Encyclopaedia of Australian Reptiles. Australian Museum Online  
<http://www.amonline.net.au/herpetology/research/encyclopedia.pdf> Version date: 5 August 2005.
- How, R.A., Dell, J. & Robinson, D.J. 2003. The Western Spiny-tailed Skink, *Egernia stokesii badia*: Declining Distribution in a Habitat Specialist. Western Australian Naturalist 24: 138-146.
- JANIS Forests Criteria (1997) Nationally agreed criteria for the establishment of a comprehensive, Adequate and Representative reserve System for Forests in Australia. A report by the Joint ANZECC/MCFFA National Forest Policy Statement Implementation Sub-committee. Regional Forests Agreement process. Commonwealth of Australia, Canberra.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Pizzey G. and Knight F (1997) The Graham Pizzey and Frank Knight Field Guide to the Birds of Australia. Angus and Robertson, Sydney Australia.
- Rose P. W. (1993) Production of habitat hollows by Wheatbelt Eucalypts, Final Report Save the Bush Research Grant 1991/92-Project R053. Report prepared by Rose and Bending Forest and Environmental Consultants for the Department of Conservation and Land management Western Australia, June 1993.
- Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia.

## 6. Glossary

### Acronyms:

<b>BoM</b>	Bureau of Meteorology, Australian Government.
<b>CALM</b>	Department of Conservation and Land Management, Western Australia.
<b>DAWA</b>	Department of Agriculture, Western Australia.
<b>DA</b>	Department of Agriculture, Western Australia.
<b>DEH</b>	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
<b>DEP</b>	Department of Environment Protection (now DoE), Western Australia.
<b>DIA</b>	Department of Indigenous Affairs
<b>DLI</b>	Department of Land Information, Western Australia.
<b>DoE</b>	Department of Environment, Western Australia.
<b>DoIR</b>	Department of Industry and Resources, Western Australia.
<b>DOLA</b>	Department of Land Administration, Western Australia.
<b>EP Act</b>	Environment Protection Act 1986, Western Australia.
<b>EPBC Act</b>	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
<b>GIS</b>	Geographical Information System.
<b>IBRA</b>	Interim Biogeographic Regionalisation for Australia.
<b>IUCN</b>	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
<b>RIWI</b>	Rights in Water and Irrigation Act 1914, Western Australia.
<b>s.17</b>	Section 17 of the Environment Protection Act 1986, Western Australia.
<b>TECs</b>	Threatened Ecological Communities.

### Definitions:

{Atkins, K (2005). *Declared rare and priority flora list for Western Australia, 22 February 2005*. Department of Conservation and Land Management, Como, Western Australia} :-

- P1** **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.
- P2** **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.
- P3** **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.



- P4** **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.
- 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 Endangered Flora Consultative 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 wild 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 Endangered Flora Consultative Committee.

**{Wildlife Conservation (Specially Protected Fauna) Notice 2005} [Wildlife Conservation Act 1950] :-**

- Schedule 1** **Schedule 1 – Fauna that is rare or likely to become extinct:** being fauna that is rare or likely to become extinct, are declared to be fauna that is need of special protection.
- Schedule 2** **Schedule 2 – Fauna that is presumed to be extinct:** being fauna that is presumed to be extinct, are declared to be fauna that is need of special protection.
- Schedule 3** **Schedule 3 – Birds protected under an international agreement:** being birds that are subject to an agreement between the governments of Australia and Japan relating to the protection of migratory birds and birds in danger of extinction, are declared to be fauna that is need of special protection.
- Schedule 4** **Schedule 4 – Other specially protected fauna:** being fauna that is declared to be fauna that is in need of special protection, otherwise than for the reasons mentioned in Schedules 1, 2 or 3.

**{CALM (2005). Priority Codes for Fauna. Department of Conservation and Land Management, Como, Western Australia} :-**

- P1** **Priority One: Taxa with few, poorly known populations on threatened lands:** Taxa which are known from few specimens or sight records from one or a few localities on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, active mineral leases. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P2** **Priority Two: Taxa with few, poorly known populations on conservation lands:** Taxa which are known from few specimens or sight records from one or a few localities on lands not under immediate threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P3** **Priority Three: Taxa with several, poorly known populations, some on conservation lands:** Taxa which are known from few specimens or sight records from several localities, some of which are on lands not under immediate threat of habitat destruction or degradation. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P4** **Priority Four: Taxa in need of monitoring:** Taxa which are considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands.
- P5** **Priority Five: Taxa in need of monitoring:** Taxa which are not considered threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

**Categories of threatened species (Environment Protection and Biodiversity Conservation Act 1999)**

- EX** **Extinct:** A native species for which there is no reasonable doubt that the last member of the species has died.
- EX(W)** **Extinct in the wild:** A native species which:  
 (a) is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or  
 (b) has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
- CR** **Critically Endangered:** A native species which is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
- EN** **Endangered:** A native species which:  
 (a) is not critically endangered; and  
 (b) is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
- VU** **Vulnerable:** A native species which:  
 (a) is not critically endangered or endangered; and  
 (b) is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
- CD** **Conservation Dependent:** A native species which is the focus of a specific conservation program, the

cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.