



## 1. Application details

### 1.1. Permit application details

Permit application No.: 1242/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Project Officer Landcorp

### 1.3. Property details

Property: LOT 258 ON PLAN 210290 (House No. 2 KING DARKAN 6392)  
LOT 257 ON PLAN 210290 (House No. 4 KING DARKAN 6392)  
LOT 256 ON PLAN 210290 (House No. 6 KING DARKAN 6392)  
LOT 255 ON PLAN 210290 (House No. 8 KING DARKAN 6392)  
LOT 254 ON PLAN 210290 (House No. 10 KING DARKAN 6392)  
LOT 253 ON PLAN 210290 (House No. 12 KING DARKAN 6392)  
LOT 252 ON PLAN 210290 (House No. 14 KING DARKAN 6392)  
LOT 251 ON PLAN 210290 (House No. 15 KING DARKAN 6392)  
LOT 250 ON PLAN 210290 (House No. 13 KING DARKAN 6392)  
LOT 249 ON PLAN 210290 (House No. 11 KING DARKAN 6392)  
LOT 248 ON PLAN 210290 (House No. 9 KING DARKAN 6392)  
LOT 247 ON PLAN 210290 (House No. 7 KING DARKAN 6392)  
LOT 246 ON PLAN 210290 (House No. 5 KING DARKAN 6392)  
ROAD RESERVE ( DARKAN 6392)  
LOT 245 ON PLAN 210290 (House No. 3 KING DARKAN 6392)

Local Government Area: Shire Of West Arthur  
Colloquial name:

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
1.98		Mechanical Removal	Building or Structure

## 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
Beard Vegetation Association 4: Medium woodland; marri and wandoo	The area proposed to be cleared comprises a largely open canopy on an elevated gravelly ridge.	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	Vegetation condition was determined from DEC Site Visit Report (2006)
Mattiske Vegetation Class - Darkin 1 (DK1): Woodland of <i>Eucalyptus marginata</i> subsp. <i>marginata</i> - <i>Eucalyptus wandoo</i> - <i>Corymbia calophylla</i> over <i>Dryandra sessilis</i> on uplands in the arid zone.	Native vegetation within the application area is in poor condition, with only a few mature <i>Corymbia calophylla</i> (Marri) and scattered <i>Eucalyptus</i> spp. (Wandoo) trees providing habitat for fauna, such as possums and birds. Birds were noted on the site at the time of the site visit.		
Mattiske Vegetation Class - Darkin 2 (DK2): Mixture of open woodland of <i>Eucalyptus marginata</i> subsp. <i>marginata</i> - <i>Banksia attenuata</i> and low open woodland of <i>Eucalyptus wandoo</i> and stands of <i>Eucalyptus drummondii</i> (northern) and <i>Eucalyptus decipiens</i> (southern) on lower slopes in the arid zone.	There is no distinct middle storey, and understorey is almost entirely absent aside from lignotubers and the odd <i>Xanthorrhoea preissii</i> . The understorey is dominated by invasive weeds and pasture grasses. Several walk trails and tracks were noted in the		

area and the presence of vehicle access tracks suggests that this area is heavily disturbed with a low biodiversity value.

Although the area under application is approximately 95% vegetated, the condition of the existing vegetation in this area is considered to be degraded (Keighery 1994).

### 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 not likely to be at variance to this Principle**

The proposal is to clear 1.98 hectares (ha) of native vegetation within the Shire of West Arthur for the purpose of urban development.

Although the area under application is approximately 95% vegetated, the condition of the vegetation is considered to be degraded (Keighery 1994). Native vegetation within the application area consists of a few mature *Corymbia calophylla* (Marri) and scattered *Eucalyptus* spp. (Wandoo) trees which may provide habitat for fauna such as possums and birds (DEC, 2006). Middle and understorey are predominantly absent, and weed invasion is extensive. The application area has been subject to disturbance as evidenced from vehicle access tracks and walk trails, and appears to have been previously cleared (DEC, 2006). The biodiversity value of the vegetation within the proposed clearing is considered to be low (DEC, 2006).

The land has already been subdivided into 14 residential blocks ranging in size from 1100m<sup>2</sup> to 1520m<sup>2</sup> and a road reserve. The proposal is to clear these residential blocks for housing.

**Methodology**    Department of Natural Resources and Environment (2002)  
Hopkins et al (2001)  
Mattiske Consulting (1998)  
Keighery (1994)  
DEC Site Visit Report (2006)

#### (b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

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

The application area is considered to be degraded (Keighery 1994) with low biodiversity values (DEC, 2006). The sparse open canopy and predominant absence of either middle or understorey suggest that the area has undergone previous clearing activities (DEC, 2006). Weed invasion is extensive and the presence of vehicle access tracks and walk trails indicate that the area has been subject to disturbance.

DEC Site Visit Report (2006) found the vegetation proposed to be cleared in poor condition, with only a few mature *Corymbia calophylla* (Marri) and scattered *Eucalyptus* spp. (Wandoo) trees possibly providing habitat for fauna such as possums and birds.

The high level of disturbance at this site, extensive weed invasion and limited diversity of native species suggests that the original biodiversity and habitat value has been significantly compromised. The vegetation is unlikely to provide significant habitat for indigenous fauna.

**Methodology**    Keighery (1994)  
DEC Site Visit Report (2006)

#### (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**

Seven records of DRF and eighteen records of Priority Flora have been identified within a radius of 20km from the proposed clearing. The closest are DRF *Tribonanthes purpurea* and Priority 4 flora *Eucalyptus latens*, both located approximately 7km east-north-east of the proposed clearing. None of the DRF or Priority flora occurs on the same vegetation type as the vegetation proposed to be cleared.

Given that the area under application is highly degraded and devoid of middle or understorey (DEC Site Visit Report, 2006) it is unlikely that the native vegetation proposed to be cleared is necessary for the continued existence of rare flora.

**Methodology** DEC Site Visit Report (2006)  
 Department of Natural Resources and Environment, 2002  
 GIS Database:  
 - Declared Rare and Priority Flora List - CALM 01/07/05  
 - Mattiske Vegetation - CALM 24/3/98

**(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**  
 There are no known threatened ecological communities (TECs) within a fifty kilometre radius of the area under application. It is unlikely that the proposed clearing is necessary for the maintenance of a threatened ecological community.

**Methodology** GIS Database:  
 - Threatened Ecological communities - CALM 12/04/05  
 - Threatened Plant Communities - DEP 06/95

**(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 may be at variance to this Principle**

	Pre-European (ha)*	Current Extent Remaining (ha)*	Remaining (%)*	Conservation Status**
IBRA Bioregion:				
Jarrah Forest	4,503,156	2,624,301	58.3	Least concern
Shire: West Arthur	282,614	84,226	29.8	Vulnerable
Beard Unit 4	1,247,834	292,993	23.5	Vulnerable
Mattiske Veg:				
Darkin 1 (Dk 1)	186,181	54,248	29.1	Vulnerable
Darkin 2 (Dk 2)	173,163	24,767	14.3	Vulnerable

\* (Shepherd et al. 2001)

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

\*\*\* Within the Intensive Landuse Zone

The area under application is located in the Shire of West Arthur and within the Jarrah Forest Bioregion. The extent of pre-European vegetation within these areas is 29.8% and 58.3% respectively (Shepherd et al., 2001).

The vegetation proposed to be cleared is a component of Beard Vegetation Association 4 (Hopkins et al., 2001) of which 23.5% of the pre-European vegetation extent remains (Shepherd et al., 2001). This vegetation type is considered as having a conservation status of 'Vulnerable' (Department of Natural Resources and Environment, 2002). 14.8% of this Beard Vegetation type is securely tenured.

The proposed clearing also forms a component of Mattiske vegetation type Darkin 1 (Dk 1) and Darkin 2 (Dk 2) of which 29.1% and 14.3% respectively of the pre-European extent remains (Mattiske Consulting, 1998). These vegetation types also have a conservation status of 'Vulnerable' (Department of Natural Resources and Environment, 2002).

The State Government is committed to the National Objectives Targets for Biodiversity Conservation which includes a target that prevents clearance of ecological communities with an extent below 30% of that present pre-1750 (Department of Natural Resources and Environment, 2002; EPA 2000). Beyond this value, species extinction is believed to occur at an exponential rate and any further clearing may have irreversible consequences for the conservation of biodiversity.

The area applied to be cleared is for 14 residential lots and a road reserve within the town of Darkan. These have previously been subdivided for residential purposes.

**Methodology** Shepherd et al (2001)  
 Hopkins et al., 2001  
 Mattiske Consulting (1998)  
 Department of Natural Resources and Environment (2002)  
 GIS Database:  
 - Pre-European Vegetation - DA 10/01  
 - EPA Position Paper No 2 Agriculture Region - DEP 12/00  
 - Interim Biogeographic Regionalisation of Australia - EA 18/10/00

**(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 wetlands or watercourses within the proposed clearing site.

Nangup Gully and Darkan Gully flow approximately 400m west and 600m north respectively of the proposed clearing. A minor non-perennial watercourse passes approximately 320m to the east of the application area. The area proposed to be cleared lies at an elevation of between 285 - 300m AHD, which is marginally higher in the landscape than the watercourses to the west, north and east at elevations of between 265 - 280m AHD.

Given the distance between the proposed clearing and these watercourses relative to the shallow topographical gradients, the removal of native vegetation is not likely to impact the values of the watercourses. The proposal is unlikely to be at variance to this principle.

**Methodology** GIS Database:  
- Rivers 250K - GA  
- Hydrography, Linear - DOE 1/2/04  
- Topographic Contours, Statewide - DOLA 12/09/02

**(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**

A report by Department of Agriculture and Food (DAFWA, 2006) found that the proposed clearing of native vegetation is unlikely to cause appreciable land degradation due to the midslope position in the landscape, shallow gradients and soil types of the area under application.

**Methodology** DAFWA Report (2006)

**(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.**

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

The area proposed to be cleared does not lie within or adjacent to areas set aside for conservation.

Hillman Nature Reserve and a Timber Reserve are located approximately 5.0km north-east and 5.3km south-west respectively of the proposed clearing. The Mattiske vegetation type of these conservation areas is different to the Mattiske vegetation type of the proposed clearing. Given the distance between the proposed clearing and the CALM managed reserves, and that the application area is considered to be degraded, it is unlikely that the proposed clearing would provide ecological linkages or impact on the environmental values of these conservation areas.

**Methodology** GIS Database:  
- CALM Managed Lands and Waters - CALM 1/07/05

**(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.**

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

The proposed clearing site lies within the Hardy Estuary/Blackwood River Catchment. The region has an annual rainfall of 600mm, and occupies the midslope position in a landscape of shallow topographical gradients (DAFWA, 2006). Groundwater salinity has been mapped at 14,000 - 35,000 mg/L TDS (Total Dissolved Solids). DAFWA (2006) have advised that no significant change is expected to the waterways downslope from the application area.

Due to the small area proposed to be cleared in relation to the topography, it is unlikely that the clearing of native vegetation will cause deterioration in the quality of surface water or groundwater within the local area.

**Methodology** DAFWA (2006)  
GIS Database:  
- Hydrographic Catchments - Catchments - DOE 23/03/05  
- Rainfall, Mean Annual - BOM 30/09/01  
- Groundwater Salinity, Statewide - 22/02/00

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

**Comments**

The area under application occupies the mid slope position in the landscape (DAFWA, 2006) with shallow topographical gradients ranging from 300m AHD at the highest point to 285m AHD at the lowest point. This relates to a landslope length of 15m over a distance of approximately 230m. DAFWA (2006) advised that the further clearing of vegetation in this landscape could increase surface runoff which would contribute to stream flows, but is unlikely to cause extensive flooding due to the size of the catchment, landslope lengths and soil types.

**Methodology** DAFWA (2006)  
GIS Database:  
- Topographic Contours, Statewide - DOLA 12/09/02

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

**Comments**

LandCorp proposes to develop a section of land (Lots 245 to 258 on Plan 210290) on the southern end of the town of Darkan (Shire of West Arthur), for urban development. Although the area under application has been subdivided and would therefore normally be exempt from requiring a Clearing Permit, the subdivided lots were created a long time ago and there is no WAPC reference. Landcorp have subsequently decided to pursue a clearing permit for the proposed clearing.

No submissions have been received for this proposal.

There is a Native Title Claim over the area under application. The Department of Environment and Conservation's advertising of the application in the West Australian Newspaper constitutes legal notification of the Native Title representative body for the purpose of the future act procedures under the Native Title Act 1993. No response was received from the representative body.

**Methodology** GIS Database:  
- Native Title Claims - DLI 07/11/05

**4. Assessor's comments**

Purpose	Method	Applied area (ha)/ trees	Comment
Building or Structure	Mechanical Removal	1.98	The assessable criteria have been addressed and the proposal is not likely to be at variance to Principles (a), (b), (c), (d), (f), (g), (h), (i) and (j); and may be at variance to Principle (e).

**5. References**

DAFWA Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture and Food Western Australia. DoE TRIM ref DOC2232.  
Department of Environment and Conservation (2006). Site Visit Report. TRIM ref DOC7373  
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.  
Hopkins, A.J.M., Beeston, G.R. and Harvey J.M. (2001) A database on the vegetation of Western Australia. Stage 1. CALMScience after J. S. Beard, late 1960's to early 1980's Vegetation Survey of Western Australia, UWA Press.  
Kelghery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.  
Mättiske Consulting (1998) Mapping of vegetation complexes in the South West forest region of Western Australia, CALM.  
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**

Term	Meaning
BCS	Biodiversity Coordination Section of DEC
CALM	Department of Conservation and Land Management (now BCS)
DAFWA	Department of Agriculture and Food
DEC	Department of Environment and Conservation
DEP	Department of Environmental Protection (now DEC)
DoE	Department of Environment

DoIR Department of Industry and Resources  
DRF Declared Rare Flora  
EPP Environmental Protection Policy  
GIS Geographical Information System  
ha Hectare (10,000 square metres)  
TEC Threatened Ecological Community  
WRC Water and Rivers Commission (now DEC)