



# Ongerup

# Rocks

# Vegetation

# And Flora

# Survey

**CONSULTANTS REPORT  
FOR JUDY O'NEILL  
BY**

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## Table of Contents

### Ongerup Rocks Vegetation and Flora Survey

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#### Acknowledgments

<b>1.0</b>	<b>Introduction</b> -----	<b>3</b>
1.1	Project Description-----	3
1.2	The Study Area-----	3
1.2.1	Location and Physical Features-----	3
1.2.2	Geology and Soils-----	5
<b>2.0</b>	<b>Method</b> -----	<b>5</b>
<b>3.0</b>	<b>Results</b> -----	<b>7</b>
3.1	Vegetation Survey-----	7
3.1.1	Previous surveys-----	7
3.1.2	Current Survey-----	7
3.1.3	Vegetation Site Descriptions-----	10
3.2	Flora Survey-----	27
3.2.1	Flora of the Study Area-----	27
3.2.2	Species of Interest-----	28
<b>4.0</b>	<b>References</b> -----	<b>28</b>

#### Appendix 1 Plant Species List

##### List of Figures

- Figure 1 Location of the Study Area - Ongerup Rocks.  
Figure 2 Vegetation Map of the Study Area

##### List of Tables

- Table 1 Muir (1977) System of Vegetation Classification  
Table 2 Vegetation Associations of the Study Area  
Table 3 The number of species and genera represented within the major families in the Study Area.

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## **1.0 Introduction**

### **1.1 Project Description**

Ongerup Rocks and the surrounding remnant vegetation is a significant site for the conservation of flora and fauna in the Ongerup area. The site includes a granite rock area and a section of the Ongerup creek which connects with the Warperup Creek and Pallinup River. The area is fenced and has not been grazed since the 1960's. Jam posts and sandalwood have previously been removed from the area. Weeds including wild oats have invaded most of the bush and pose the greatest management problem at the site. Plant health is good apart from fringing vegetation along the Ongerup creek which shows signs of stress from waterlogging and salinity.

The overall aim of the Bushland Benefits project is to determine the current state of the site and then to improve the quality and biodiversity values of the site and its associated corridors and creekline in order to provide valuable habitat for local flora and fauna species and to encourage the movement of these species between remnants.

The object of the flora and vegetation survey at Ongerup Rocks is to gain an understanding of the vegetation associations and plant species present (including native and weed species) in the remnant. No formal survey has previously been carried out at the site. The survey will provide direction for revegetation and weed control work designed to restore the ecosystem and manage salinity. Flora surveys are also important in providing baseline data on the condition of the site prior to the commencement of the restoration activities in order to assess the success of these activities and monitor the ongoing condition of the bush. This final report describes the vegetation and flora of the Ongerup Rocks site and includes a plant species list, vegetation descriptions and a vegetation map of the area.

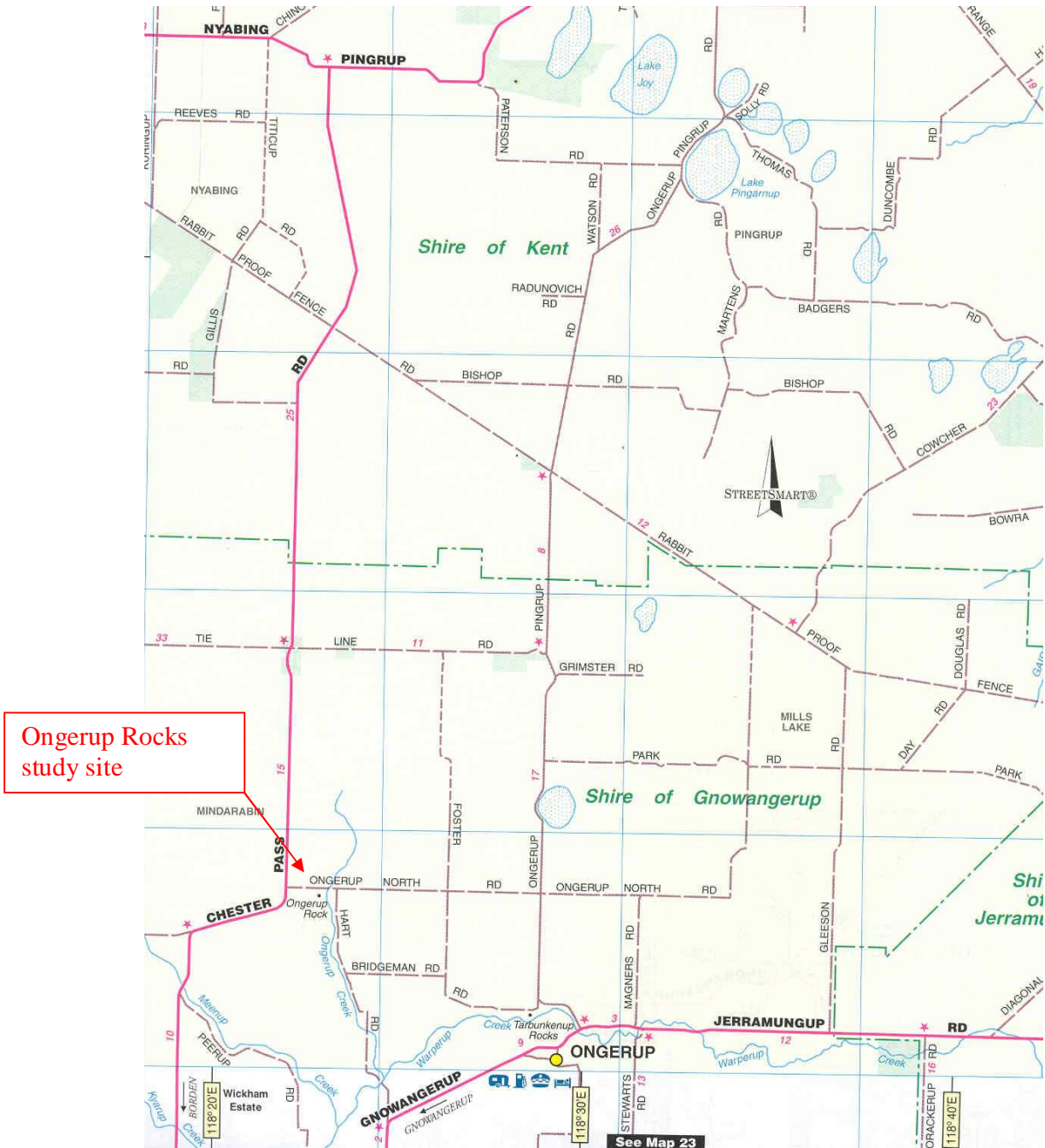
### **1.2 The study Area**

#### **1.2.1 Location and Physical Features**

The study area is an area of remnant vegetation on privately owned land approximately 12 kms North West of Ongerup on Location 6505 in the Shire of Gnowangerup. The area is owned by Kelly and Judy O'Neill. The remnant is approximately 24 hectares in size and includes a creek line, the Ongerup creek, and granite area known as Ongerup Rocks. The remnant is surrounded by cleared farmland to the south, east and west. The Ongerup North Road runs along the northern boundary. The Ongerup creek and adjacent vegetation provides a good connection with other remnant to the south and north. Another corridor of bushland runs from the south west corner south and then west.



Figure 1. The location of the study area.



### 1.2.2 Geology and Soils

The study area is covered by 2 map units in the Geological Survey of Western Australia 1:250 000 Geological Series, Dumbleyung sheet (Chin & Brakel 1986).

- Anb Quartz-feldspar-biotite gneiss: compositionally and texturally banded
- Qc Colluvium and minor alluvium – silt, sand and gravel; generally on slopes adjoining rocks and laterite outcrops

The soils vary from poorly structured grey clays and well structured brown clays to deposited sands and silts along the Ongerup creek. Most of the site is sandy loam over clay or granitic loams associated with occasional granite outcrops (LFW 2001). The Ongerup Rock is situated on the creekline. Some areas along the creekline are affected by water logging and salinity.

## 2.0 Method

The ground survey of the vegetation and flora of the study area was carried out on the 14<sup>th</sup> and 23<sup>rd</sup> September 2005. The work included site descriptions, collection of voucher specimens and vegetation mapping.

General vegetation divisions were noted using coloured aerial photography at a scale of 1:25 000. Areas of interest thus delineated were examined in the field and the vegetation and soils at selected sites described. Because of time limitations some areas were not covered in detail in the ground survey and mapping was carried out by extrapolation of known vegetation associations using the aerial photographs. Some vegetation boundaries were not always distinct on the photographs. The placement of these boundaries was aided by field observations and the use of a stereo viewer.

Vegetation association descriptions were based on the classification system devised by Muir (1977) which was specifically designed for describing wheatbelt vegetation (see Table 1).

Specimens of plant species encountered were collected and identified using keys and by comparison with specimens at the Western Australian Herbarium. Experts involved in revising particular genera were consulted wherever possible to ensure accuracy with identification.

**TABLE 1 - MUIR SYSTEM OF VEGETATION CLASSIFICATION**

LIFE FORM/ HEIGHT CLASS	CANOPY COVER				
	DENSE 70-100% d	MID-DENSE 30-70% c	SPARSE 10-30% i	VERY SPARSE 2-10% r	
<b>T</b> Trees > 30m	Dense Tall Forest	Tall Forest	Tall Woodland	Open Tall Woodland	
<b>M</b> Trees 15-30m	Dense Forest	Forest	Woodland	Open Woodland	
<b>LA</b> Trees 5-15m	Dense Low Forest A	Low Forest A	Low Woodland A	Open Low Woodland A	
<b>LB</b> Trees < 5m	Dense Low Forest B	Low Forest B	Low Woodland B	Open Low Woodland B	
<b>KT</b> Mallee tree form	Dense Tree Mallee	Tree Mallee	Open Tree Mallee	Very Open Tree Mallee	
<b>KS</b> Mallee shrub form	Dense Shrub Mallee	Shrub Mallee	Open Shrub Mallee	Very Open Shrub Mallee	
<b>S</b> Shrubs > 2m	Dense Thicket	Thicket	Scrub	Open Scrub	
<b>SA</b> Shrubs 1.5-2.0m	Dense Heath A	Heath A	Low Scrub A	Open Low Scrub A	
<b>SB</b> Shrubs 1.0-1.5m	Dense Heath B	Heath B	Low Scrub B	Open Low Scrub B	
<b>SC</b> Shrubs 0.5-1.0m	Dense Low Heath C	Low Heath C	Dwarf Scrub C	Open Dwarf Scrub C	
<b>SD</b> Shrubs 0.0-0.5m	Dense Low Heath D	Low Heath D	Dwarf Scrub D	Open Dwarf Scrub D	
<b>P</b> Mat plants	Dense Mat plants	Mat plants	Open Mat plants	Very Open Mat plants	
<b>H</b> Hummock Grass	Dense Hum. Grass	Mid-Dense Hum. Grass	Hummock Grass	Open Hummock Grass	
<b>GT</b> Bunch grass > 0.5m	Dense Tall Grass	Tall Grass	Open Tall Grass	Very Open Tall Grass	
<b>GL</b> Bunch grass < 0.5m	Dense Low Grass	Low Grass	Open Low Grass	Very Open Low Grass	
<b>J</b> Herbaceous spp.	Dense Herbs	Herbs	Open Herbs	Very Open Herbs	
<b>VT</b> Sedges > 0.5m	Dense Tall Sedges	Tall Sedges	Open Tall Sedges	Very Open Tall Sedges	
<b>VL</b> Sedges < 0.5m	Dense Low Sedges	Low Sedges	Open Low Sedges	Very Open Low Sedges	
<b>X</b> Ferns	Dense Ferns	Ferns	Open Ferns	Very Open Ferns	
Mosses, liverwort	Dense Mosses	Mosses	Open Mosses	Very Open Mosses	

## 3.0 Results

### 3.1 Vegetation Survey

#### 3.1.1 Previous surveys

The study area is situated within the Ongerup Vegetation System which is a subdivision of the Roe Botanical District (Beard 1980).

Beard (1980) describes the vegetation as mallee covering the bulk of the area with other formations only in small patches including woodland of *Eucalyptus loxophleba* and *Eucalyptus salmonophloia* on red soils, woodland of *Eucalyptus occidentalis* in depressions on winter- wet grey clays and in swamps and low forest of *Eucalyptus platypus* on grey clay.

Beard (1980) has mapped the Dumbleyung area at a scale of 1:250 000. The map unit covering the study area is eMi *Eucalyptus loxophleba* and *Eucalyptus occidentalis* Woodland along the Ongerup creek.

Land for Wildlife visited the site in August 2001. Vegetation associations identified include *Eucalyptus occidentalis* woodland, *Eucalyptus loxophleba* woodland, *Acacia acuminata* low woodland and *Poa* grassland. The Land for Wildlife report also identified *Ottelia ovalifolia* (Swamp lily) as possibly occurring at the rock. This species was not seen during the present survey. The report provided information for revegetation and weed control and identified the main sources of disturbance in the area as salinity and rubbish dumping. Plant health and expected plant diversity were reported as good.

Weeds recorded included *Ursinia anthemoides*, *Avena barbata* (wild oats), *Limonium lobatum* (statice), *Rumex* sp (dock), *Ehrharta calycina*, (perennial velt grass) and *Agave* sp.

#### 3.1.2 Current Survey

The vegetation associations mapped and described in this study are outlined in Table 2. Listed below are the vegetation condition ratings used in this report. These ratings are taken from Keighery (1994).

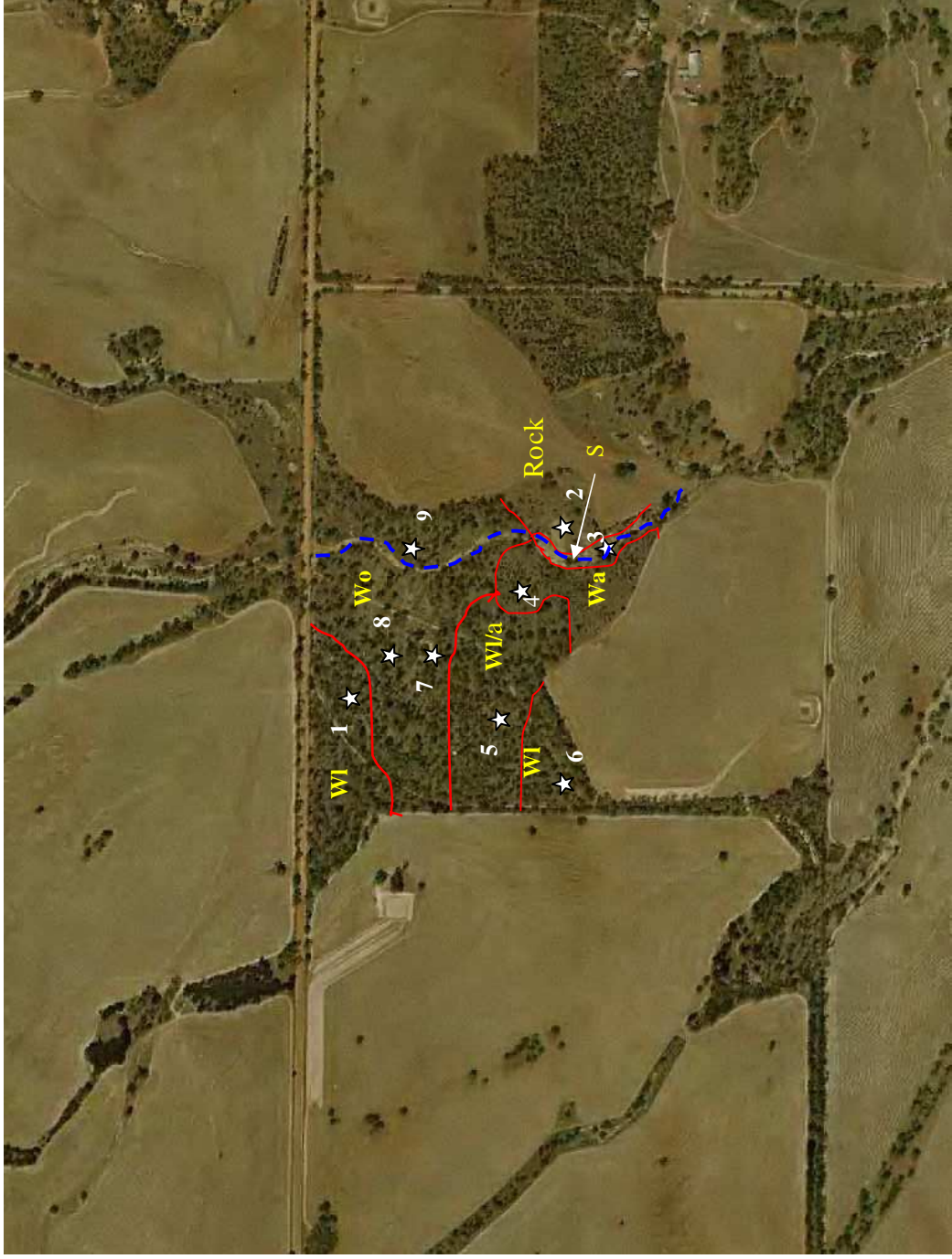
- 1. Pristine** – no obvious signs of disturbance
- 2. Excellent** – vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species.
- 3. Very Good** – Vegetation structure altered, obvious signs of disturbance.
- 4. Good** – Vegetation structure significantly altered by very obvious signs of multiple disturbance. Retains basic vegetation structure or ability to regenerate to it.
- 5. Degraded** – Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management.
- 6. Completely Degraded** – The structure of the vegetation is no longer intact and the area is completely or almost completely without native species.



**Table 2. Vegetation Associations of the Study Area.**

<b>Vegetation Association</b>	<b>Map Unit</b>	<b>Soils</b>	<b>Topography</b>	<b>Sites</b>	<b>Condition</b>
<i>Eucalyptus loxophleba</i> Woodland	WI	loam soils over clay	Flat to sloping terrain	Site 1, 6	Site 1 very good Site 6 good
<i>Eucalyptus loxophleba</i> / <i>Acacia acuminata</i> Woodland	W I/a	loam soils over clay	Gently sloping terrain	Site 5	3. Very Good
<i>Eucalyptus occidentalis</i> Woodland / <i>Melaleuca</i> Thicket	Wo	Clay loam	Gently sloping terrain	Site 7	4. Good
<i>Eucalyptus occidentalis</i> Woodland - dam	Wo	Clay loam	Dam area	Site 8	4. Good
<i>Eucalyptus occidentalis</i> Woodland -creek	Wo	Clay loam	Creek line	Site 9	4. Good
<i>Acacia acuminata</i> (jam) Woodland	Wa	Loam soils, granite rock to the surface in places	Gently sloping	Site 4	5. Degraded
Rock outcrop, rock pool and adjacent area	R	Sandy loam soil pockets on granite outcrop	Sloping to streamline	Site 2	4. Good
Streamline	S	Coarse wash silt and sand over clay	Streamline	Site 3	4. Good

Figure 2. Vegetation Map of Ongerup rocks



**3.1.3 Site Descriptions**  
**Site 1 Eucalyptus loxophleba Woodland**

**Vegetation Description:** Low Woodland A over Herbs / Low Grass

**Soils and Topography:** Loam soils over clay

**GPS (WGS 84)** 33°54' 14.7" 118°22' 48.5"

**Condition:** 3. Very Good. Some loss of understorey species due to weed competition. Some aggressive weeds present such as *\*Avena fatua wild oats*, *\*Romulea rosea* Guilford grass, *\*Moraea flaccida* Cape Tulip but not at high density.

**Species**

*Eucalyptus loxophleba* LMS 275  
*Acacia microbotrya* LMS 277 scattered  
*Allocasuarina huegeliana* LMS 276 rare

Shrubs 1.0-1.5m scattered  
*Gastrolobium crassifolium* LMS 278  
*Daviesia scoparia* LMS 279

Shrubs 0.5 – 1.0 scattered  
*Templetonia sulcata* LMS 280  
*Rhagodia preissii* LMS 281

Shrubs to 0.5m scattered  
*Acacia erinacea* LMS 282  
*Acacia bidentata* LMS 283  
*Dysphema crassifolia* LMS 284  
*Sclerolaena uniflora* LMS 285  
*Maireana brevifolia* LMS 286  
*Wilsonia humilis* LMS 320

**Asteraceae - Daisies**

*\*Arctotheca calendula* LMS 289 cape weed  
*Blennospora drummondii* LMS 306  
*Brachycome ciliaris* LMS 308  
*Brachycome pusilla* LMS 309  
*\*Cotula bipinnata* LMS 319  
*\*Hypochaeris glabra* LMS 318  
*Hyalosperma glutinosum* LMS 299  
*Podolepis capillaris* LMS 305  
*Rhodanthe manglesii* LMS 298  
*Rhodanthe polycephala* LMS 315  
*\*Ursinia anthemoides* LMS 312

Herbs / Bulbs

*Freesia alba x leichtlinii* LMS 288

*Lepidium rotundum* LMS 311

*Lomandra effusa* LMS 302

\**Moraea flaccida* LMS 297 Cape Tulip

\**Oxalis perennans* LMS 300

\**Romulea rosea* LMS 304 Guildford grass

*Thysanotus patersonii* LMS 296

\**Trifolium arvense* var *arvense* LMS 317 hare's foot clover

\**Trifolium campestre* var *campestre* LMS 316 hop clover

\**Trifolium hybridum* var *hybridum* LMS 310 alsike clover

Grasses

*Austrostipa elegantissima* LMS 290

*Austrostipa puberula* LMS 293

\**Avena fatua* LMS 291 LMS 303 Wild oat

\**Bromus rubens* LMS 295 Brome grass

\**Ehrharta longiflora* LMS 314 Velt grass

\**Hordeum leporinum* LMS 292 Barley grass

*Neurachne alopecuroidea* LMS 313

Sedges / rushes

*Desmocladus quiricanus* LMS 301

*Gahnia ancistrophylla* LMS 294



**Photograph 1.** *Eucalyptus loxophleba* woodland.

## Site 2

## Rock outcrop, rock pool and adjacent area

**Vegetation Description:** Dense Herbs / Dense Low Grass scattered shrubs

**Soils and Topography:** Sandy loam soil pockets in granite outcrop

**GPS (WGS 84)**                      33°54' 26.1"                      118°22' 58.0"                      WGS 84

**Condition:** 3. Good. Some species have been planted and some aggressive weeds such as velt grass and wild oats have reached high density at the edges of the rock. Soil pockets on the rock are in better condition but some plant species have been lost due to weed competition especially with Guildford grass.

### Species

*Acacia microbotrya* scattered

*Allocasuarina huegeliana* scattered

*Eucalyptus platypus* LMS 335 planted

*Melaleuca leiocarpa* LMS 336 planted

Mosses and Lichen

Herbs / Bulbs

\**Arctotheca calendula* LMS 289 cape weed

*Cheilanthes austrotenuifolia* LMS 333

*Cotula coronopifolia* LMS 332 waterbuttons

*Crassula colorata* LMS 321

*Drosera glanduligera* LMS 327

\**Erodium botrys* LMS 324, LMS 326 corkscrews

\**Hypochaeris glabra* LMS 318 smooth catsear

\**Oxalis perennans*

\**Romulea rosea* LMS 304 Guildford grass frequent

\**Rumex crispus* LMS 364 Dock

\**Trifolium arvense var arvense* LMS 331

\**Trifolium campestre var campestre* LMS 329

\**Trifolium hirtum* LMS 325 rose clover

Grasses

\**Avena fatua* LMS wild oats

\**Ehrharta longiflora* LMS 314 annual velt grass

\**Ehrharta calycina* LMS 366 perennial velt grass

Water Plants

*Glossostigma diandra* LMS 322

*Damasonium minus* LMS 323

LMS 366





**Photograph 2.** Pond on Ongerup rock including water plants and weeds.



**Photograph 3.** Ongerup rocks and surrounding area.

### Site 3

### Creekline

**Vegetation Description:** Low Woodland B in places over Dwarf Scrub B/Open Dwarf Scrub D over Dense to Open Herbs/Dense to Open Low Grass patchy

**Soils and Topography:** Coarse wash sand over clay loam

**GPS (WGS 84)**                      33°54' 28.5"                      118°22' 57.1"                      WGS 84

**Condition:** 3. Good. Loss of plant species due to salinity, waterlogging and weed competition. Sand and silt have been washed down the creek due to heavy rains earlier in the year. Revegetation work required. Stative has been previously planted and may cause a problem if it spreads into surrounding areas.

#### Species

*Acacia saligna* LMS 340

*Acacia acuminata* edge

*Eucalyptus platypus* planted

*Eucalyptus spathulata*

*Eucalyptus occidentalis*

Shrubs to 0.5m

*Halosarcia* sp LMS 341

Asteraceae - Daisies

\**Arctotheca calendula* cape weed

\**Cotula bipinnata* ferny cotula

\**Hypochaeris glabra*

Herbs / Bulbs

\**Limonium lobatum* LMS 339 status

\**Oxalis perennans*

Grasses

\**Avena fatua* wild oats

\**Ehrharta longiflora* LMS 314 annual velt grass

\**Ehrharta calycinus* perennial velt grass

*Amphibromus* sp LMS 338





**Photograph 4.** Ongerup Creek south of Ongerup rocks.



**Photograph 4.** The bank of the Ongerup creek south of Ongerup Rocks with *Acacia acuminata* (jam) in the background.

**Site 4*****Acacia acuminata* Jam Woodland**

**Vegetation Description:** *Acacia acuminata* Low Forest B over Dense Herbs / Dense Low Grass scattered *Eucalyptus loxophleba* (patch of *Avena* Tall Dense Grass)

**Soils and Topography:** Red brown loam soils - granite rock to the surface in places

**GPS (WGS 84)**                      33°54' 23.7"                      118°22' 55.9"                      WGS 84

**Condition:** 5. Degraded. No native understorey species remain in the area. Some *Eucalyptus* species and *Melaleuca elliptica* have been planted in this area. Some very aggressive weeds are at high density such as wild oats and velt grass. Revegetation and weed control is recommended. sandalwood could be reintroduced in to the area.

**Species**

*Eucalyptus loxophleba* to 10ms scattered

*Acacia acuminata* LMS 342

*Acacia* ?microbotrya

*Eucalyptus phenax* LMS 343 planted

*Eucalyptus spathulata* planted

*Melaleuca elliptica* planted

\**Arctotheca calendula* LMS 289 cape weed

\**Hypochaeris glabra* LMS 318

\**Ursinia anthemoides* LMS 312

**Herbs / Bulbs**

\**Oxalis perennans* LMS 300

\**Romulea rosea* LMS 304 Guilford grass

\**Trifolium* sp

\**Erodium botrys*

**Grasses**

\**Avena fatua* LMS 291 LMS 303

\**Ehrharta longiflora* Velt grass

\**Ehrharta calycinus*





**Photograph 6.** *Acacia acuminata* - jam woodland

**Site 5**      ***Eucalyptus loxophleba* Woodland over *Acacia acuminata* Jam**

**Vegetation Description:** Low Woodland A over Low Woodland B over Open Herbs / Low Grass

**Soils and Topography:** Loam soils over clay

**GPS (WGS 84)**                      33°54' 21.6"                      118°22' 46.8"                      WGS 84

**Condition:** 3. Very Good. Some loss of understorey species due to weed competition. Wild oats are present but not always at high density.

**Species**

*Eucalyptus loxophleba* to 8ms

*Acacia acuminata* to 5ms

*Melaleuca hamata* LMS 360

Shrubs to 0.5m

*Thomasia purpurea* LMS 346

Asteraceae - Daisies

\**Arctotheca calendula* cape weed

\**Hypochaeris glabra* LMS 318



*Rhodanthe manglesii*

\**Ursinia anthemoides* LMS 312

*Waitzia acuminata* LMS 355

Herbs / Bulbs

\**Anagallis arvensis* var *caerulea* LMS 348 pimpernel

*Borya sphaerocephala* LMS 351

\**Brassica tournefortii* LMS 359 wild turnip

*Crassula colorata*

*Dianella revoluta*

*Drosera subhirtella* LMS 347

*Drosera glanduligera* LMS 350

*Erodium cygnorum* LMS 349

\**Oxalis perennans*

\**Parentucellia latifolia* LMS 345 red bartsia

\**Romulea rosea* Guildford grass

*Stackhousia monogyna* LMS 356

Grasses

\**Aira cupaniana* LMS 354

\**Avena fatua* wild oats

\**Ehrharta longiflora* velt grass

*Neurachne alopecuroidea*

Sedges / rushes

*Desmocladus quiricanus*

*Schoenus nanus* LMS 352

*Juncus capitatus* LMS 353



**Photograph 7.** *Eucalyptus loxophleba* (york gum) woodland with an understory of *Acacia acuminata* (jam).

**Site 6**      ***Eucalyptus loxophleba* Woodland**

**Vegetation Description:** *Eucalyptus loxophleba* Low Forest A over *Acacia acuminata* Open Low Woodland B over Herbs / Low Grass

**Soils and Topography:** Loam soils over clay

**GPS (WGS 84)**                      33°54' 26.9"                      118°22' 40.8"                      WGS 84

**Condition:** 3. Good. Aggressive weeds at high density especially at the edges and close to the track including velt grass and wild oats.

**Species**

*Eucalyptus loxophleba*

*Acacia acuminata*

*Acacia microbotrya* scattered

*Allocasuarina huegeliana* rare

*Hakea preissii* LMS 361

Shrubs 0.5 – 1.0 scattered

*Templetonia sulcata*

*Senna artemisioides x artemisioides*

Shrubs to 0.5m

*Acacia erinacea*

*Rhagodia sp*

*Sclerolaena uniflora*

*Wilsonia humilis*

Asteraceae - Daisies

\**Arctotheca calendula* cape weed

\**Hypochaeris glabra*

*Rhodanthe manglesii*

\**Ursinia anthemoides*

Herbs / Bulbs

*Crassula colorata*

\**Geranium botrys*

\**Trifolium arvense var arvense*

\**Trifolium campestre var campestre*

\**Trifolium hybridum var hybridum*

Grasses

*Austrostipa elegantissima*

\**Avena fatua* wild oats

\**Bromus rubens* brome grass

\**Ehrharta longiflora* velt grass

\**Hordeum leporinum* barley grass

*Neurachne alopecuroidea*

Sedges / rushes

*Desmocladus quiricanus*

*Gahnia ancistrophylla*



**Photograph 8.** *Eucalyptus loxophleba* woodland in the south west corner (site 6)

**Site 7**      ***Eucalyptus occidentalis* Flat topped Yate Low Woodland A  
over *Melaleuca* Thicket**

**Vegetation Description:** Low Woodland A over Thicket (in places) over Open  
Low Grass / Open Herbs (Tall Grass in places)

**Soils and Topography:** Brown clay loam soils. Low lying area.

**GPS (WGS 84)**                      33°54' 16.1"                      118°22' 50.8"                      WGS 84

**Condition:** 4 Good to 3 Very good in places. There is some loss of understorey  
species due to weed competition. Aggressive weeds in high density in some  
areas including wild oats and velt grass.

**Species**

*Eucalyptus occidentalis* trees to 14ms  
*Eucalyptus phenax* LMS 373 mallee scattered  
*Acacia microbotrya* scattered

Shrubs 1.0 + scattered  
*Daviesia* sp  
*Gastrolobium crassifolium*  
*Templetonia sulcata*

Shrubs to 0.5m  
*Acacia erinacea*  
*Dysphema crassifolia*  
*Rhagodia drummondii*  
*Sclerolaena uniflora*

Asteraceae - Daisies  
\**Arctotheca calendula* cape weed  
*Brachycome* sp  
\**Cotula bipinnata* ferny cotula  
\**Hypochaeris glabra*  
*Podolepis capillaris*  
\**Ursinia anthemoides*

Herbs / Bulbs  
\**Anagallis arvensis*  
\**Freesia alba x leichtlinii*  
\**Romulea rosea* Guilford grass  
\**Spergularia marina* LMS 368  
\**Trifolium arvense* var *arvense*  
\**Trifolium campestre* var *campestre*  
\**Trifolium hybridum* var *hybridum*



Grasses

\**Aira cupaniana*

\**Avena fatua*

\**Ehrharta longiflora* Velt grass frequent in places

*Austrostipa elegantissima*

*Austrostipa juncifolia* LMS 367 Tall Grass

Rushes / sedges

*Schoenus sculptus* LMS 369



**Photograph 9.** *Eucalyptus occidentalis* Flat topped Yate Low Woodland A over *Melaleuca* Thicket



**Site 8**      ***Eucalyptus occidentalis* Flat topped Yate (dam area)**

**Vegetation Description:** Low Forest A over Low Grass

**Soils and Topography:** Brown clay loam soils. Low lying area. Dam area

**GPS (WGS 84)**              33°54' 19.3"              118°22' 48.8"              WGS 84

**Condition:** 4 Good. Understorey species have been lost due to weed competition. Aggressive weeds such as velt grass are at high density in some areas.

**Species**

*Eucalyptus occidentalis* trees to 12ms

*Eucalyptus phenax* mallee scattered

Shrubs 1.0 + scattered

*Hakea preissii*

*Acacia consobrina* LMS 363

Asteraceae (Daisies)

\**Arctotheca calendula* cape weed

\**Cotula bipinnata*

\**Sonchus oleraceus* LMS 371

\**Ursinia anthemoides*

Herbs / Bulbs

\**Romulea rosea* guildford grass

\**Rumex crispus* dock

\**Trifolium arvense* var *arvense*

\**Trifolium campestre* var *campestre*

Grasses

*Austostipa* sp

\**Ehrharta longiflora* velt grass frequent

\**Lolium ?rigidum* ryegrass

Rushes / sedges

*Isolepis cernua* LMS 370

*Juncus aridicola* LMS 372



**Photograph 10.** *Eucalyptus occidentalis* Flat topped Yate next to the dam.

**Site 9**      ***Eucalyptus occidentalis* Flat topped Yate - creek line**

**Vegetation Description:** Low Woodland A over *Halosarcia* Dwarf Scrub D over Dense Low Grass / Dense Herbs

**Soils and Topography:** Brown clay loam soils. Creek line and adjacent flat area salt affected.

**GPS (WGS 84)**                      33°54' 17.6"                      118°22' 54.2"                      WGS 84

**Condition:** 4 Good. Understorey species have been lost due to weed competition, waterlogging and salinity. Salt tolerant species such as *Halosarcia* species have become established along the creekline in places and trees (flat topped Yates) have died in one area.

**Species**

*Eucalyptus occidentalis*      trees to 12ms and seedlings to 1.0m

Shrubs 3.0 + scattered  
*Acacia microbotrya*

Shrubs to 0.5ms  
*Halosarcia* sp LMS 374  
*Dysphema crassifolium*  
*Maireana brevifolia* LMS 375  
*Rhagodia drummondii* LMS 376

Herbs / Bulbs  
\**Anagallis arvensis*  
\**Arctotheca calendula* cape weed  
\**Cotula* sp  
*Dianella revoluta*  
\**Freesia alba x leichtlinii*  
\**Hypochoeris glabra*  
\**Romulea rosea* guildford grass frequent  
\**Rumex crispus* dock  
\**Trifolium arvense* var *arvense*  
\**Trifolium campestre* var *campestre*  
\**Ursinea anthemoides*

Grasses  
*Austrostipa elegantissima*  
\**Avena fatua* wild oats  
\**Bromus rubens* brome grass  
\**Ehrharta longiflora* velt grass frequent  
\**Hordeum leporinum* LMS 292 barley grass





**Photograph 11.** *Eucalyptus occidentalis* Flat topped Yate - creek line



**Photograph 12.** *Eucalyptus occidentalis* Flat topped Yate area adjacent to the creek line.

## 3.2 Flora Survey

### 3.2.1 Flora of the Study Area.

A total of 87 plant species are recorded in Appendix 1 as occurring in the study area including 27 introduced (weed) species. Identifications with the generic name followed by "?" are uncertain due to a lack of flowering or fruiting material or to confusion in the current taxonomy of the group concerned. The nomenclature follows that of the Census of Western Australian Plants (The WA Herbarium data base).

Due to the time constraints, Appendix 1 only represents part of the flora of the area, possibly 75%. Further survey work especially in August and October will provide a more comprehensive record of the flora of the area.

The families with the largest representatives of genera and species are listed in Table 3. The families Asteraceae (daisies), Poaceae (grasses), Papilionaceae (pea flowers) and Mimosaceae (wattles) were the most strongly represented in the flora of the study area. The number of daisies, grasses and peas present generally reflects the number of weed species present from these families.

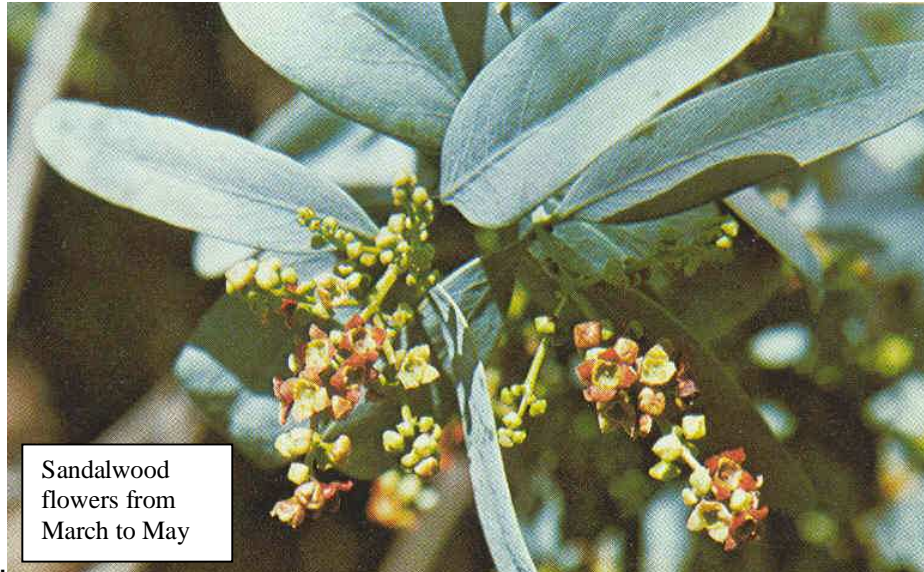
**Table 3. The number of species and genera represented within the major families in the study area.**

Family	No. species	No. Genera	Introduced Species
Asteraceae (daisys)	14	11	5
Poaceae (grasses)	10	7	6
Papilionaceae (pea flowers)	7	4	4
Mimosaceae (wattles)	6	1	0
Myrtaceae (bottlebrushes, <i>Eucalyptus</i> etc)	6	2	0
Chenopodiaceae	5	4	0
Cyperaceae	4	3	0



### 3.2.2 Species of Interest

Sandal wood *Santalum spicatum* occurred in the study area but was cleared some time ago. This would be an excellent species to reintroduce as part of the revegetation program. Sandalwood has been extensively cleared in the past due to its commercial value.



## 4.0 References

Beard, J.S. (1980) "The Vegetation of the Dumbleyung Area, WA." Vegmap Publications, Perth, Western Australia.

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Keighery, B. (1994) "Bushland Plant Survey. A guide to plant community survey for the community." Wildflower Society of WA (Inc) Western Australia.

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# **Appendix 1**

## **Plant Species List**

## Plant species list Ongerup Rocks.

### Plants collected by Anne (Coates) Rick, Linda Strahan and Judy O'Neill

Family Number	Taxon Name	Collecting Number
7	<b>Adiantaceae</b>	
	Cheilanthes austrotenuifolia H.M.Quirk & T.C.Chambers	333
110	<b>Aizoaceae</b>	
	Disphyma crassifolium (L.) L.Bolus	284
27	<b>Alismataceae</b>	
	Damasonium minus (R.Br.) Buchenau	323
054F	<b>Anthericaceae</b>	
	Thysanotus patersonii R.Br.	296
345	<b>Asteraceae</b>	
	Arctotheca calendula (L.) Levyns	289
	Blennospora drummondii A.Gray	306
	Brachyscome ciliaris (Labill.) Less.	308
	Brachyscome pusilla Steetz	309
	Cotula bipinnata Thunb.	319
	Cotula coronopifolia L.	332
	Hyalosperma glutinosum Steetz	299
	Hypochaeris glabra L.	318
	Podolepis capillaris (Steetz) Diels	305
	Rhodanthe manglesii Lindl.	298
	Rhodanthe polycephala (A.Gray) Paul G.Wilson	315
	Sonchus oleraceus L.	371
	Ursinia anthemoides (L.) Poir.	312
	Waitzia acuminata Steetz	355
054L	<b>Boryaceae</b>	
	Borya sphaerocephala R.Br.	351
138	<b>Brassicaceae</b>	
	Brassica tournefortii Gouan	359
	Lepidium rotundum (Desv.) DC.	311
164	<b>Caesalpiaceae</b>	
	Senna artemisioides subsp. x artemisioides	362
113	<b>Caryophyllaceae</b>	
	Spergularia marina (L.) Griseb.	368
70	<b>Casuarinaceae</b>	
	Allocasuarina huegeliana (Miq.) L.A.S.Johnson	276

<b>105</b>	<b>Chenopodiaceae</b>	
	Maireana brevifolia (R.Br.) Paul G.Wilson	375
	Maireana brevifolia (R.Br.) Paul G.Wilson	286
	Rhagodia drummondii Moq.	376
	Rhagodia preissii Moq.	281
	Sclerolaena uniflora R.Br.	285
<b>307</b>	<b>Convolvulaceae</b>	
	Wilsonia humilis R.Br.	320
<b>149</b>	<b>Crassulaceae</b>	
	Crassula colorata (Nees) Ostenf.	321
<b>32</b>	<b>Cyperaceae</b>	
	Gahnia ancistrophylla Benth.	294
	Isolepis cernua (Vahl) Roem. & Schult.	370
	Schoenus nanus (Nees) Benth.	352
	Schoenus sculptus (Nees) Boeck.	369
<b>054C</b>	<b>Dasypogonaceae</b>	
	Lomandra effusa (Lindl.) Ewart	302
<b>143</b>	<b>Droseraceae</b>	
	Drosera glanduligera Lehm.	327
	Drosera glanduligera Lehm.	350
	Drosera subhirtella Planch.	347
<b>167</b>	<b>Geraniaceae</b>	
	Erodium botrys (Cav.) Bertol.	326
	Erodium botrys (Cav.) Bertol.	330
	Erodium cygnorum Nees	349
<b>60</b>	<b>Iridaceae</b>	
	Freesia alba x leichtlinii	288
	Moraea flaccida (Sweet) Steud.	297
	Romulea rosea (L.) Eckl.	204
<b>52</b>	<b>Juncaceae</b>	
	Juncus aridicola L.A.S.Johnson	372
	Juncus capitatus Weigel	353
<b>163</b>	<b>Mimosaceae</b>	
	Acacia acuminata Benth.	342
	Acacia bidentata Benth.	283
	Acacia consobrina R.S.Cowan & Maslin	363
	Acacia erinacea Benth.	282
	Acacia microbotrya Benth.	277
	Acacia saligna (Labill.) H.L.Wendl.	340



<b>273</b>	<b>Myrtaceae</b>	
	<i>Eucalyptus loxophleba</i> Benth.	275
	<i>Eucalyptus phenax</i> Brooker & Slee	343
	<i>Eucalyptus phenax</i> Brooker & Slee	373
	<i>Eucalyptus platypus</i> Hook.	335
	<i>Eucalyptus spathulata</i> Hook.	337
	<i>Melaleuca hamata</i> Fielding & Gardner	360
	<i>Melaleuca leiocarpa</i> F.Muell.	336
<b>168</b>	<b>Oxalidaceae</b>	
	<i>Oxalis perennans</i> Haw.	300
<b>165</b>	<b>Papilionaceae</b>	
	<i>Daviesia scoparia</i> Crisp	279
	<i>Gastrolobium crassifolium</i> Benth.	278
	<i>Templetonia sulcata</i> (Meisn.) Benth.	280
	<i>Trifolium arvense</i> L. var. <i>arvense</i>	331
	<i>Trifolium arvense</i> L. var. <i>arvense</i>	317
	<i>Trifolium campestre</i> Schreb. var. <i>campestre</i>	316
	<i>Trifolium campestre</i> Schreb. var. <i>campestre</i>	329
	<i>Trifolium hirtum</i> All.	325
	<i>Trifolium hybridum</i> L. var. <i>hybridum</i>	310
<b>054E</b>	<b>Phormiaceae</b>	
	<i>Dianella revoluta</i> R.Br.	
<b>294</b>	<b>Plumbaginaceae</b>	
	<i>Limonium lobatum</i> (L.f.) Chaz.	339
<b>31</b>	<b>Poaceae</b>	
	<i>Aira cupaniana</i> Guss.	354
	<i>Austrostipa elegantissima</i> (Labill.) S.W.L.Jacobs & J.Everett	290
	<i>Austrostipa juncifolia</i> (Hughes) S.W.L.Jacobs & J.Everett	367
	<i>Austrostipa puberula</i> (Steud.) S.W.L.Jacobs & J.Everett	293
	<i>Avena fatua</i> L.	291
	<i>Avena fatua</i> L.	303
	<i>Bromus rubens</i> L.	295
	<i>Ehrharta calycina</i> Sm.	365
	<i>Ehrharta longiflora</i> Sm.	334
	<i>Ehrharta longiflora</i> Sm.	314
	<i>Hordeum leporinum</i> Link	292
	<i>Neurachne alopecuroidea</i> R.Br.	313
<b>103</b>	<b>Polygonaceae</b>	
	<i>Rumex crispus</i> L.	364
<b>293</b>	<b>Primulaceae</b>	
	<i>Anagallis arvensis</i> var. <i>caerulea</i> Gouan	348

<b>90</b>	<b>Proteaceae</b> Hakea preissii Meisn.	361
<b>39</b>	<b>Restionaceae</b> Desmocladus quiricanus B.G.Briggs & L.A.S.Johnson	301
<b>316</b>	<b>Scrophulariaceae</b> Glossostigma diandrum (L.) Kuntze Parentucellia latifolia (L.) Caruel	345
<b>202</b>	<b>Stackhousiaceae</b> Stackhousia monogyna Labill.	
<b>223</b>	<b>Sterculiaceae</b> Thomasia purpurea (Aiton) Gay	346