

# Moora District Threatened Flora Recovery Team

## Annual Report 2003



by **Gina Broun, Conservation Officer**  
For the **Moora District Threatened Flora Recovery Team**



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**Moora District**  
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## Acronyms Used Herein

AgWA	Dept of Agriculture, Western Australia
CALM	Dept of Conservation and Land Management
CR	Critically Endangered (IUCN red list ranking)
DRF	Declared Rare Flora
EN	Endangered (IUCN red list ranking)
IRP	Interim Recovery Plan
IUCN	International Union for Conservation of Nature
KPBG	Kings Park Botanic Gardens
MDTFRT	Moora District Threatened Flora Recovery Team ('Recovery Team')
NACC	Northern Agricultural Catchments Council
NRM	Natural Resource Management
RP	Recovery Plan
TEC	Threatened Ecological Communities
TSSC	Threatened Species Seed Centre
VU	Vulnerable (IUCN red list ranking)
WATSCU	West Australian Threatened Species and Communities Unit
WATSN	West Australian Threatened Species Network
WMNRMG	West Midlands Natural Resource Management Group
WWF	World Wide Fund for Nature

## Summary

This report details progress made by members & associates of the MDTFRT in 2003 towards the recovery of threatened flora species and Threatened Ecological Communities occurring within CALM's Moora District. The principal District contact for threatened flora issues is Ms Gina Broun, Conservation Officer for the Moora District CALM.

Within the District there are 70 species of DRF, of which 25 are considered Critically Endangered, 21 Vulnerable and 24 are Endangered (IUCN red list categories). There are a further 327 Priority species and 7 TECs, of which 6 are ranked as Endangered and the other as Vulnerable.

The Recovery Team met twice during 2003 (see minutes attached), its members having worked proactively towards conservation of threatened species and ecological communities throughout the year.

Actions included monitoring of known populations, surveying for 'new' populations, seed and propagule collection, translocation measures, community education, procuring external funds for on-ground works, obtaining ecological and biological information, industry consultation, field trials, liaison with other stakeholders and writing of IRPs.

At present there is one full Recovery Plan, 17 completed IRPs and 5 draft IRPs for DRF species and a further 3 for TECs that occur within the Moora District (see Attachment 1). Each of these plans stipulates criteria for the recovery of the species (or TEC), which aim to quantify the success or failure of the plan and its implementation. The standard criteria are as follows:

**Criteria for success:** The number of individuals within populations and/or the number of populations have increased.

**Criteria for failure:** The number of individuals within populations and/or the number of populations have decreased.

As the implementation of both IRPs and RPs are long term (i.e. 3 - 5 years), it is often not possible to quantify their success or failure on an annual basis. Where there have been observed increases or decreases in the number of individuals or known populations within 2003, these have been clearly stipulated within section 2.1 of this Annual Report.

## 1.0 RECOVERY TEAM

### 1.1 Membership details

In 2003, the Recovery Team met on the 10<sup>th</sup> March and 2<sup>nd</sup> September, with the next meeting planned for March 18<sup>th</sup> 2004. In addition to MDTFRT members<sup>1</sup>, other parties who are involved in the management of threatened flora are also encouraged to attend the biannual meetings. These representatives are listed as “*Extended Working Group*” below.

#### Members:

Position (area of expertise)	Representing	Currently filled by
Conservation Officer	CALM, Moora District	Gina Broun
Nature Conservation Coordinator	CALM, Moora District	Rebecca Carter (Chair)
Research Scientist (Translocations)	CALM, WA Herbarium	Leonie Monks
Senior Research Scientist (Priority Flora species)	CALM, WA Herbarium	Sue Patrick
Technical Officer (Seed Store)	CALM, WA Herbarium	Andrew Crawford
Ecologist	CALM, WATSCU	Val English
Project Officer (Threatened Ecological Communities)	CALM, WATSCU	Rosemary Rees
Herbarium representative	Dandaragan Herbarium	Rep - rotating
Herbarium representative	Jurien Bay Regional Herbarium	Rep - rotating
Roadside Management Officer	Main Roads WA	Larry Trinder
Community representative	Shire of Carnamah	Allan Tinker/Lorraine Tinker
Shire representative	Shire of Carnamah	Malcolm Pumphrey
Community representative	Shire of Coorow	Joy Williams/Don Williams
Shire representative	Shire of Coorow	Peter Gillis
Community representative	Shire of Dandaragan	Iain Wilson
Shire representative	Shire of Dandaragan	Steve Rowe
Community representative	Shire of Irwin	vacant
Shire representative	Shire of Irwin	Aaron Wotton
Community representative	Shire of Moora	vacant

1. As endorsed by CALM’s Director of Nature Conservation, March 2004

Shire representative	Shire of Moora	John Grey
Community representative	Shire of Three Springs	Jenny Borger
Shire representative	Shire of Three Springs	Ted Moore
Community representative	Shire of Victoria Plains	vacant
Shire representative	Shire of Victoria Plains	Allen Kent
NRM Group representative - West Midlands	West Midlands NRM Group	Lisa Smith
Per Way Superintendent	Westnet Rail	Bruce Eldridge
Threatened Species Network Coordinator	World Wide Fund for Nature	Raquel Carter

### **Extended Working Group**

<b>Position (area of expertise)</b>	<b>Representing</b>	<b>Currently filled by</b>
Conservation Officer	CALM, WATSCU	Vanessa Clarke
Project Officer (IRP writing)	CALM, WATSCU	Gillian Stack
Project Officer (IRP writing)	CALM, WATSCU	Julie Patten
Project Officer (Salinity Action Plan)	CALM, WATSCU	Robyn Luu
Senior Research Scientist (Propagation)	Kings Park Botanic Gardens	Eric Bunn
Road Maintenance Environment Officer	Main Roads WA major contractor-CSR Emoleum	Karen Smith
NRM representative - Regional	Northern Agricultural Catchments Council	Rep - rotating
Community representative 2	Shire of Dandaragan	vacant
Shire representative 2	Shire of Three Springs	Charles Strahan
Community representative (Threatened flora surveys)	CALM Volunteer	Fred Hort
Environmental Management Coordinator	Western Power	John Morrell
Per Way Supervisor	Westnet Rail	John Stevens

#### **1.1 Role of the MDTFRT**

The MDTFRT was formed in 1996 in response to the need to implement actions as described within Wildlife Management Program No. 28<sup>2</sup> recovery actions for threatened flora species with the assistance of community, industry, landowners and departmental stakeholders.

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<sup>2</sup> Wildlife Management Program No 28 *Declared Rare and Poorly Known Flora in Moora District* was in draft stage at the time of MDTFRT formation. It was subsequently published in 2001.

The Moora District includes the Shires of Three Springs, Carnamah, Coorow, Dandaragan, Victoria Plains, Moora and parts of the Irwin and Gingin Shires. In 2001 its role was expanded to include management of Threatened Ecological Communities.

Membership comprises representatives of: CALM Moora District, WATSCU and the WA Herbarium; local community and landholders; the Jurien Bay and Dandaragan Regional Herbaria; local shires; WWF, WMNRM Group, Westnet Rail and Main Roads WA.

In addition to the Recovery Team's endorsed members, the extended Working Group includes individuals and representatives of other groups who play an important role in management of threatened flora and TECs in the Moora District. This comprises representatives of: Western Power, CSR Emoleum; NACC, Kings Park Botanic Gardens; CALM contract staff; additional community members and core CALM volunteers.

Whilst the Recovery Team meets on a biannual basis, its members interact throughout the year to progress Recovery Actions for DRF species and to address issues related to other threatened flora and TEC management. This is conducted via a collaborative email update service in addition to liaison at an individual or sub-group level as necessary.

Recovery actions are those actions considered a priority to effect the recovery of DRF and include monitoring, survey, research, education and on ground works. They are detailed in a suite of Recovery Plans and Interim Recovery Plans for threatened flora species as well as being listed in CALM's Wildlife Management Program No. 28, *Declared Rare and Poorly Known Flora in the Moora District*<sup>3</sup>.

## **2. SUMMARY OF WORKS UNDERTAKEN IN 2003**

### **2.1.1 Works on individual Declared Rare Flora Species**

#### ***Acacia aprica* (CR)**

- Translocation programs for *Acacia aprica* were set up in 1998 and have been monitored regularly since.
- Natural populations were monitored.
- Provided fencing materials to private landholder to fence remnant vegetation block containing a mature stand of *A. aprica*.
- A basic fire management strategy was written for this species

#### ***Acacia cochlocarpa* (CR)**

- A translocation program for *Acacia cochlocarpa* subsp. *cochlocarpa* was set up in 1998 and has been monitored regularly since.
- Both translocated and natural populations were monitored in 2003.
- A basic fire management strategy was written for this species

#### ***Acacia forrestiana* (V)**

- Surveys of roadside populations were undertaken
- This species was included in a field booklet of 13 species of DRF found on roadsides within the Shire of Dandaragan, written by 2 members of the Recovery Team with the assistance of a WWF Threatened Species Network grant

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<sup>3</sup> 2001, SJ Patrick and AP Brown

***Acacia recurvata***

- Surveys for the species resulted in a new population was found on private property (located by Lyn Atkins of CSIRO)

***Acacia splendens*  
(syn *A. sp. Dandaragan*) (CR)**

- This species was included in a field booklet of 13 species of DRF found on roadsides within the Shire of Dandaragan, written by 2 members of the Recovery Team with the assistance of a WWF Threatened Species Network grant
- The largest population was surveyed in full in September 2003, with a resulting count of over 600 mature plants and over 100 seedlings. This compares to the last previous count of 250 plants in 1999.

***Acacia vassalii* (CR)**

- IRP was completed
- Roadside populations surveyed (Moora & Merredin Districts)

***Andersonia gracilis* (V)**

- This species was included in a field booklet of 13 species of DRF found on roadsides within the Shire of Dandaragan, written by 2 members of the Recovery Team with the assistance of a WWF Threatened Species Network grant

***Caladenia drakeoides* (CR)**

- This species was surveyed for in 2003 with the help of private landholders, CALM staff and KPBG.
- A new population of 25 plants was located.
- KPBG staff undertook hand pollination of two wild populations and returned to collect seed later in the season.
- Seed was collected from associated vegetation surrounding 2 disturbed populations of the species with the assistance of Moora TAFE students. These are being grown up into seedlings for use in habitat rehabilitation at the sites, planned for winter 2004.

***Chamelaucium griffinii* ms (V)**

- This species was included in a field booklet of 13 species of DRF found on roadsides within the Shire of Dandaragan, written by 2 members of the Recovery Team with the assistance of a WWF Threatened Species Network grant
- A resurvey of all shire vested and conservation estate populations has resulted in increases of known numbers of these 2 populations of ~ 4,200 plants.

***Conospermum densiflorum* subsp. *unicephalatum* (E)**

- All existing known populations were surveyed, population boundaries assessed and roadside markers replaced, removed or relocated as appropriate.
- A new population of this species was found

***Darwinia* sp. *Carnamah* (E)**

- Rail and road reserve populations monitored in 2003 with GPS locations of the entire population having been recorded.

***Daviesia bursariodes* (CR)**

- Both translocated and natural populations of *Daviesia bursariodes* were monitored in 2003.

- A section of the Three Springs-Perenjori Rd has been realigned to allow for expansion of a population of the species. Gravel displaced by the works will be respread on adjoining disused gravel pit and monitored for seedling recruitment. The Shire of Three Springs in consultation with CALM was initiated this arrangement.

***Dryandra serratuloides subsp. perissa (E)***

- This species was included in a field booklet of 13 species of DRF found on roadsides within the Shire of Dandaragan, written by 2 members of the Recovery Team with the assistance of a WWF Threatened Species Network grant
- Roadside populations were surveyed and excluded from harm during road maintenance activities in a partnership between the Shire of Dandaragan and CALM.
- Markers were removed and replaced to account for an increase in the distribution of this species found during survey.

***Eremophila nivea (CR)***

- Trial translocation plots of *E. nivea* were monitored to assess the success of germination in areas of previous direct seeding. None has been recorded to date.
- All known populations of the species were surveyed in 2003.
- Seed was collected from two populations and sent to the TFSC

***Eremophila scaberula (CR)***

- Unpublished report was written: 2003, Harris, A. and Yates, C. *Population Characteristics of Eremophila scaberula. A framework for monitoring change.* Department of Conservation and Land Management.
- Reviewed IRP completed in 2003
- A basic fire management strategy was written for this species
- Weed control was undertaken on rail and roadside reserve populations in June 2003
- Rail reserve populations underwent detailed study of distribution, health and fruit vs. flower counts to assess seed set of the remnant populations.

***Eucalyptus absita***

- This species was included in a field booklet of 13 species of DRF found on roadsides within the Shire of Dandaragan, written by 2 members of the Recovery Team with the assistance of a WWF Threatened Species Network grant
- Populations 2 and 3 were monitored.
- Fencing materials were provided to landowner to fence population

***Eucalyptus balanites***

- This species was included in a field booklet of 13 species of DRF found on roadsides within the Shire of Dandaragan, written by 2 members of the Recovery Team with the assistance of a WWF Threatened Species Network grant.
- Surveyed single known Moora District population
- Population numbers and locations reconciled
- IPR was written and is currently in draft form

***Eucalyptus dolorosa***

- Monitored single known population in 2003
- Collected seed for storage at the TFSC
- A field trip to Mt Misery showcased this species to attending members of the MDTFRT in September 2003

***Frankenia conferta***

- A new population of approximately 650 plants has been located (this species has never before been found in the Moora District)

***Gastrolobium hamulosum***

- Unpublished report was written: 2003, Harris, A. and Yates, C. *Population Characteristics of Gastrolobium hamulosum. A framework for monitoring change.* Department of Conservation and Land Management.
- This species was surveyed for opportunistically in 2003
- A new population was located on private property
- A basic fire management strategy was written for this species

***Grevillea althoferorum* (CR)**

- A basic fire management strategy was written for this species
- Work continues on tissue culturing of this species for a translocation planned for 2005.

***Grevillea batrachiodes* (CR)**

- Seedlings are being grown up at Kings Park nursery for a translocation planned for June 2004.
- The translocation proposal has been amended to reflect a change of site and is currently undergoing assessment.
- A basic fire management strategy was written for this species
- Unpublished report was written: 2003, Harris, A. and Yates, C. *Population Characteristics of Grevillea batrachioides. A framework for monitoring change.* Department of Conservation and Land Management.

***Grevillea calliantha* (CR)**

- This species was included in a field booklet of 13 species of DRF found on roadsides within the Shire of Dandaragan, written by 2 members of the Recovery Team with the assistance of a WWF Threatened Species Network grant
- Populations were monitored in 2003
- New population of ~70 mature, healthy plants was found on private property

***Grevillea humifusa* (CR)**

- A basic fire management strategy was written for this species
- This species was included in a field booklet of 13 species of DRF found on roadsides within the Shire of Dandaragan, written by 2 members of the Recovery Team with the assistance of a WWF Threatened Species Network grant
- Unpublished report was written: 2003, Harris, A. and Yates, C. *Population Characteristics of Grevillea humifusa. A framework for monitoring change.* Department of Conservation and Land Management.
- 166 seedlings were planted in a fenced trial plot within the Coomallo Nature Reserve with the assistance of volunteers and neighbours, as per an approved translocation proposal
- This translocated population has been monitored regularly since planting to assess its response to water vs. non-watered treatments. Health estimates were also taken as were height x width measurements.
- Feral pig control measures were made throughout 2003 to aid in long term protection of the translocation site

***Hakea megalosperma* (VU)**

- A new population has been found outside the species' known distribution range.



- This species was included in a field booklet of 13 species of DRF found on roadsides within the Shire of Dandaragan, written by 2 members of the Recovery Team with the assistance of a WWF Threatened Species Network grant

***Hemiandra gardneri* (CR)**

- Rail and road reserve part of a larger population in Watheroo were carefully excluded from damage during separate road and rail maintenance activities in 2003.
- Several populations were monitored in 2003.

***Jacksonia pungens* (CR)**

- A basic fire management strategy was written for this species
- Individual tagged plants were monitored in detail to continue the work of Colin Yates which began in 2000.

***Paracleana dixonii* (VU)**

- This species was included in a field booklet of 13 species of DRF found on roadsides within the Shire of Dandaragan, written by 2 members of the Recovery Team with the assistance of a WWF Threatened Species Network grant

***Patersonia spirafolia* (EN)**

- This species was included in a field booklet of 13 species of DRF found on roadsides within the Shire of Dandaragan, written by 2 members of the Recovery Team with the assistance of a WWF Threatened Species Network grant
- All known populations were monitored in 2003, including a population burnt in 2001
- A new population was found, which with the assistance of students, 35 volunteers and CALM staff was thoroughly surveyed on 2 occasions and now comprises the single largest known population of 437 plants.
- CALM Moora has liaised with Western Power towards a review of protocol & procedure (including training) between their organisation and contractors to strengthen the protection of DRF species. An area containing *P. spirafolia* in the general locality of new powerlines was used as an example of the types of protection required.

***Spirogardnera rubescens***

- This species was included in a field booklet of 13 species of DRF found on roadsides within the Shire of Dandaragan, written by 2 members of the Recovery Team with the assistance of a WWF Threatened Species Network grant
- New population of 302 plants was located

***Synaphea quartzitica* (CR)**

- A basic fire management strategy was written for this species
- Work continues on tissue culturing of this species for a translocation planned for 2005.
- Detailed population studies were undertaken in 2003 of core populations located on Conservation Estate.

***Thomasia sp. Green Hill***

- Both populations of the species were monitored in 2003

***Verticordia albida* (CR)**

- Work continues towards a translocation of this species planned for winter 2004.

- Roadside populations were surveyed and seed collected by A. Chant for storage at the TFSC

### 2.1.2 Seed was collected from the following DRF species for storage at the TSSC. <sup>4</sup>

#### **DRF (CR)**

*Grevillea batrachioides*  
*Eremophila nivea*  
*Eucalyptus absita*  
*Eucalyptus dolorosa*  
*Grevillea humifusa*

#### **DRF (E)**

*Eucalyptus impensa*  
*Eucalyptus lateritica*  
*Eucalyptus leprophloia*

#### **DRF (V)**

*Eucalyptus suberea*  
*Eucalyptus johnsoniana*  
*Hakea megalosperma*  
*Hakea megalosperma*  
*Stylidium sp.*

## 3.0 Priority Species

### 3.1.1 Seed was collected from the following Priority Flora species for storage at the TSSC and for the Millennium Seed Bank. <sup>5</sup>

#### **Priority 1**

*Corymbia chlorampra*

#### **Priority 2**

*Acacia careens*  
*Eucalyptus angularis*  
*Hypocalymma tenuatum*  
*Stylidium aeonoides*  
*Synaphea lesueurensis*

#### **Priority 3**

*Acacia plicata*  
*Beaufortia eriocephala*  
*Eucalyptus foecunda ssp* □ *oolimba*  
*Grevillea uniformis*  
*Hakea polyanthema*  
*Hibbertia spicata ssp. Leptotheca*

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<sup>4</sup> This summary showcases works undertaken from Sept 02 to Sept 03 (MDTFRT meeting dates) and has not been included in previous annual reports.

<sup>5</sup> This summary showcases works undertaken from Sept 02 to Sept 03 (MDTFRT meeting dates) and has not been included in previous annual reports.

*Scaevola globosa*  
*Stylidium nonscandens*  
*Verticordia luteola* var. *luteola*

**Priority 4**

*Asterolasia drummondii*  
*Calothamnus pachystachyus*  
*Chordifex chaunocoleus*  
*Darwinia sanguinea*  
*Dryandra sclerophylla*  
*Eucalyptus exilis*  
*Eucalyptus pendens*  
*Eucalyptus zopherophloia*  
*Gastrolobium callistachys*  
*Grevillea rudis*  
*Hakea neurophylla*

**3.2 Surveys and/or monitoring of the following Priority species were undertaken in 2003**

**3.2.1 Priority 1**

***Conostylis caricina* subsp. *elachys***

- Surveys for new populations (none located)

***Dampiera glabrescens***

- Surveys for new populations (none located)

***Dampiera tephrea***

- Surveys for new populations resulted in locating 1 new populations totalling 150 plants

***Drosera marchantii* subsp. *prophylla***

- Surveys for new populations resulted in locating 1 new population totalling 50 plants

***Grevillea synaphea* subsp. *minyulo***

- Surveys for new populations (none located)

***Micromyrtus* sp. *Three Springs***

- Surveys for new populations resulted in locating 1 new population totalling 50+ plants

***Myriocephalus suffruticosus***

- Surveys for new populations (none located)

***Scaevola Eneabba***

- Surveys for new populations resulted in locating 2 new populations totalling 44 plants

***Scholtzia* sp. *Gunyidi***

- Surveys for new populations resulted in locating 2 new populations totalling 41 plants

***Synaphea sparsiflora***

- Surveys for new populations (none located)

***Thomasia formosa***

- Surveys for new populations (none located)

***Verticordia dasystylis subsp oestopoia***

- Surveys for new populations (none located)

***Eucalyptus absita x loxophleba***

- One roadside population was monitored

***Stylidium cymiferum***

- 2 new populations found, totalling 500+ plants

**3.1.2 Priority 2**

***Acacia chapmanii subsp. australis***

- Surveys for new populations (none located)

***Acacia wilsonii***

- Surveys for new populations resulted in locating new population totalling 1 plant

***Arnocrinum gracillimum***

- Surveys for new populations (none located)

***Baeckea sp. Bunny Road***

- Surveys for new populations resulted in locating 2 new populations totalling of 60+ plants

***Dryandra cypholoba***

- Surveys for new populations resulted in locating 19 new populations totalling 233 plants

***Goodenia xanthotricha***

- Surveys for new populations (none located)

***Guichenotia quasicalva***

- Surveys for new populations resulted in locating 1 new population totalling 11 plants

***Lasiopetalum molle subsp boothendarrense***

- Surveys for new populations (none located)

***Petrophile clavate***

- Surveys for new populations resulted in locating 3 new populations totalling 50 plants

***Scholtzia sp. Eradu***

- Surveys for new populations (none located)

**3.1.3 Priority 3**

***Petrophile plumosa***

- 2 new populations located, totalling 30 plants

***Verticordia huegii var tridens***

- New population of this species, totalling ~ 100 plants was located.

#### 3.1.4 Priority 4

##### *Grevillea saccata*

- New population found (500+ plants)

##### *Regelia megacephala*

- New population of 600+ mature plants located on private property

##### *Anigozanthos humilis subsp. chrysanthus*

- Monitoring regrowth of known populations along areas burnt in 2002/03 wildfires was undertaken with assistance of Westnet Rail.
- Post fire monitoring of populations in Mogumber Nature Reserve was also undertaken, resulting in the known population increasing to over 500 healthy plants.

##### *Eremophila microtheca*

- Seed was collected from the roadside populations and sent to the TFSC

#### 4.0 Threatened Ecological Communities (TEC) recovery work in Moora District

In 2003 a new project officer for TECs, Rosemary Rees was appointed. There are six Endangered, one Critically Endangered and two Vulnerable ecological communities in the Moora District, which are currently listed in the TEC database, and an additional community which has been listed as Priority 2. Works in 2002-3 include: <sup>6</sup>

##### 4.1.1 Lesueur-Coomallo Floristic Community D1 (CR)

- The Threatened Ecological Community Scientific Committee (TECSC) assessed this community in July 2000 and an IRP (No. 109) was prepared for this community in September 2002 but no recovery work has been implemented for this community due to a mining application that is currently being assessed adjacent to this area.

##### 4.1.2 Assemblages of organic mound springs of Three Springs (EN)

- CALM has been working with Russel Speed, a hydrologist with the Dept. of Agriculture in Geraldton to investigate the hydrological mechanisms (i.e. artesian water verses shallow ground water) that are supplying the mound springs.
- A set of monitoring bores on a property to the east of the main area of mound springs have been installed to monitor water systems supplying the mound springs.
- Liaison with a private landholder regarding purchase of a block containing a mound spring adjacent to the reserve on Bunny road. This negotiation has been successful and the block has become Nature Reserve #12705.

##### 4.1.3 Ferricrete floristic community (Rocky Springs type) (EN)

- Survey work failed to locate additional occurrences of the community

##### 4.1.4 Herbaceous plant assemblages on bentonite lakes (EN)

- IRP 108 was completed in September 2002.
- 2 new occurrences located in the Buntine-Marchagee Recovery Catchment

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<sup>6</sup> This summary showcases works undertaken from Sept 02 to Sept 03 (MDTFRT meeting dates) and has not been included in previous annual reports.

- Pinjarrega Nature Reserve occurrences were monitored
- Updated information entered into TEC database

**4.1.5 Heath community on chert hills of the Coomberdale Floristic Region (EN)**

- Work towards the Gazettal of Cairn Hill which houses the TEC is ongoing, including negotiation with adjoining landholder for a land swap to increase the size of remnant vegetation under Conservation Estate.

**4.1.6 Lesueur-Coomallo Floristic Community A1.2 (EN)**

- IRP 106 was completed in May 2002.

**4.1.7 Lesueur-Coomallo Floristic Community M2 (EN)**

- CALM staff with the help of local landholders monitored both occurrences

**4.1.8 Plant Assemblages of the Innering System (VU)**

- Populations of two DRF, *Chorizema humile* and *Darwinia* sp. Carnamah, have been found within the TEC and a priority species *Scholtzia* sp. Prowaka Springs has been collected from the area but it is yet to be relocated.
- The main recovery actions implemented for this community has been a fencing program, funded by Gordon Reid foundation, to completed 50km of fence.
- An article on this community also has been prepared for the summer edition of Landscape.

**4.1.9 Stromatolite community of stratified hypersaline coastal lakes (VU)**

- CALM Moora District has successfully negotiated with the Shire of Dandaragan to incorporate Lake Thetis into Nambung National Park. The arrangement has been endorsed by Council and the Conservation Commission of Western Australia and awaits retesting.
- In February 2004, the Moora District in conjunction with the Shire of Dandaragan, Murdoch University and the West Midlands NRM Group submitted A Coastcare grant for protection of this community.

**4.2 Other possible TECs**

Several wetlands in the Buntine-Marchagee recovery catchment were visited with members of the recovery catchment team. During these visits, which located two additional occurrence of the Bentonite Lakes TEC, two *Eucalyptus camaldulensis* wetlands, which Greg Keighery recommended for further investigation were assessed as potential TECs.

**5.0 Industry Consultation**

As part of cooperative management of threatened species and communities, CALM receives requests for information and advice from private industry and public utilities. The requests received in 2003 are briefly detailed below.

Communication with	Issue	Outcome	Species involved
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CSR Emoleum (Main Roads WA contractor)	Roadside maintenance beside DRF areas	Species rich stretch of roadside minimally maintained so as not to disturb vegetation until contractor surveys the area for DRF.	Several species of DRF yet to be surveyed.
Public enquiry (Helen Thomas)	Identification of flora species on roadside	Public education & positive PR resulted	<i>Hakea neurophylla</i> (P4)
Rotabore (Telstra contractor)	Replacement of subterranean telecommunications cable	Area surveyed to ensure no damage to DRF populations. Increased knowledge of DRF species	<i>Hakea megalosperma</i> (DRF)
Shire of Dandaragan	Road maintenance in DRF areas on Marchagee track	Increased knowledge of DRF species CALM assisted surveys of populations and was onsite during works Damage to DRF plants avoided by shire workers using specific vegetation control techniques (hand pruning or machine slashing depending on the location of DRF plants), remedied dated DRF marker locations. Permit to take issued in the case of accidental damage.	<i>Dryandra serratuloides</i> subsp. <i>perissa</i> , <i>Spirogardnera rubescens</i>
Shire of Moora	Road/Rail crossing site distance maintenance	Permit to take issued. Surveys with CALM staff to show Works Manager areas to avoid and advise on best methods to prune vegetation in sensitive areas. No DRF plants were damaged.	<i>Hemiandra gardneri</i>
SKM (CSR Emoleum sub-contractor)	Proposed road widening of Brand Hwy, Cataby	Advice provided to SKM on location and description of DRF and priority species, which may occur in the area.	Yet to be properly surveyed. Possible DRF species include: <i>Grevillea calliantha</i> , <i>Andersonia gracilis</i> , <i>Eleocharis keigheryi</i>
SMEC Australia (Main Roads WA contractor)	Realignment of intersection of Brand Hwy & Boothendarra Rd	Awareness of priority species to be avoided during works. Permit to take issued for 3 Priority species plants	<i>Grevillea saccata</i> (P4), <i>Conostephium minus</i> , <i>Jacksonia</i> sp. <i>Badgingarra</i> (P1), <i>Dryandra subulate</i> (P3)
Western Power	Special notification to Western Power of new DRF population located near area proposed for new power line	Damage to species avoided, increased knowledge of DRF species	<i>Patersonia spirifolia</i> (EN)
Westnet Rail	Remedial works in areas surrounding DRF population (advice on best way to repair cleared tracks from other parties fighting wildfires of 2002/3 on Railway Reserve)	Damage to species avoided, increased knowledge of DRF species.	<i>Anigozanthus humilis</i> subsp. <i>chrysanthus</i> (P4)
<b>Communication with</b>	<b>Issue</b>	<b>Outcome</b>	<b>Species involved</b>

Westnet Rail	Advice on location and identification of species in area of proposed routine maintenance & re-sleepering.	Damage to species avoided, increased knowledge of DRF species. Permit to take issued in the case of accidental damage.	<i>Jacksonia pungens</i> , <i>Gastrolobium appressum</i> , <i>Hemiandra gardneri</i> (all DRF species)
Westnet Rail	Maintenance along Bindi-Miling railway.	Avoid damage to DRF and Priority species. Westnet Rail funded DRF survey and provided report of findings to CALM <sup>7</sup> . Permit to take issued in the case of accidental damage.	<i>Acacia vassalii</i> (DRF), <i>Gastrolobium hamulosum</i> (DRF), <i>Eucalyptus macrocarpa x pyriformis</i> (P1), <i>Acacia anarthos</i> (P3)
Westnet Rail	Railway maintenance between Moora-Mooliabenie	Permit to take extended. Surveys with CALM staff to show Per way controller plants to avoid. Damage avoided	<i>Conospermum densiflorum</i> subsp. <i>unicephalatum</i> , <i>Dryandra serratulioides</i> subsp. <i>serratulioides</i> , <i>Eremophila scaberula</i>
Westnet Rail	Railway maintenance between Toodyay and Miling	Avoid damage to DRF and Priority species. Permit to take issued in the case of accidental damage.	<i>Gastrolobium hamulosum</i> , <i>Acacia vassalii</i>

## 6.0 Bibliography

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Patrick, S. and Brown, A.P. (2001). *Declared Rare and Poorly Known Flora in the Moora District. Wildlife Management Program No. 28*. Department of Conservation and Land Management, Perth.

## ATTACHMENT 1

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<sup>7</sup> Bennet (2003)



**List of Recovery Plans and Interim Recovery Plans for Threatened Flora species  
and Threatened Ecological Communities occurring within the Moora District  
(current as at Dec 2003)**

Recovery Plans

*Eucalyptus rhodantha*

Interim Recovery Plans

*Acacia aprica*

*Acacia cochlocarpa*

*Caladenia drakeoides*

*Caladenia elegans*

*Chorizema humile*

*Grevillea batrachioides*

*Eremophila scaberula*

*Grevillea althoferorum*

*Grevillea calliantha*

*Grevillea curviloba* subsp. *Incurva*

*Gastrolobium hamulosum*

*Grevillea humifusa*

*Jacksonia pungens*

*Synaphea quartzitica*

*Thomasia* sp. *Green Hill*

*Verticordia albida*

*Verticordia spicata* subsp. *squamosa*

Draft Interim Recovery Plans

*Conospermum densiflorum* subsp. *unicephalatum*

*Daviesia bursarioides*

*Eucalyptus balanites*

*Eucalyptus dolorosa*

Threatened Ecological Communities

Watheroo-Marchagee Bentonite Wetlands

Lesueur-Coomallo Vegetation Type A1

Innering Hills System