

MERREDIN DISTRICT THREATENED FLORA AND COMMUNITIES MANAGEMENT PROGRAM

**Annual Report
2005**

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For the Merredin District Threatened Flora and Communities Recovery Team



Figure 1: *Pityrodia scabra* July 2005 (Photo: Joel Collins)

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*Merredin District Threatened Flora and Communities Management Program – 2005 Annual Report
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1. Summary of 2005 key actions

- The Merredin District Threatened Flora and Communities Recovery Team held 2 recovery team meetings in 2005 (30 May and 14 December).
- Rare flora management program projects, funded by the Avon Catchment Council (ACC), were completed by June 2005.
- Successful translocation of *Daviesia euphorbioides* at Hindmarsh Nature Reserve.
- Successful recruitment burn for *Daviesia euphorbioides* at Dowerin with 25 seedlings surviving.
- Eleven new Declared Rare Flora (DRF) populations and 6 new populations of priority taxa surveyed.
- Merredin CALM District display at the Dowerin Field Days.
- *Grevillea dryandroides* subsp. *dryandroides* DRF survey undertaken at Ballidu with 17 Wongan-Hills Bushcare group volunteers.
- The collection and curation of a 12 DRF species and 5 priority species for the Merredin District Threatened Flora Herbarium.

2. Introduction

This annual report details the rare flora recovery actions undertaken in the Merredin District during 2005, in accordance with the goals of the Merredin District threatened flora and communities recovery team. The recovery team's objective is to ensure and enhance, by appropriate management, the continued survival in the wild of populations of Declared Rare Flora (DRF) and other plants in need of special protection (Mollemans, Brown and Coates, 1993).



Figure 2: Volunteers from the Wongan-Ballidu Bushland Group successfully assisted CALM with surveying for an additional sub-population of *Grevillea dryandroides* subsp. *dryandroides* (a DRF species) in the Ballidu golf course. (Photo: Joel Collins).

3. Merredin district Threatened Flora and Communities Recovery team

3.1 Roles and Responsibilities

The role of the Merredin District Threatened Flora and Communities Recovery Team is to implement the Merredin District Threatened Flora Management Program (MDTFMP), and Recovery plans and Interim Recovery Plans (IRP's) for flora and Threatened Ecological Communities (TECs). This is achieved by the Recovery Team and the Department of Conservation and Land Managements (CALM) Conservation Officer working closely together. The Recovery Team links various members of the community and agencies with the Department in order to achieve recovery actions for the Districts Declared Rare Flora (DRF), Priority Flora and TECs.

3.2 Members

The following are members of the Merredin District Threatened Flora and Communities Recovery Team. The participation of Recovery Team Members is essential in achieving the goals of the MDTFMP. They provide invaluable advice, local knowledge and expertise to ensure that the recovery actions are implemented in the most effective and efficient manner.

Table 1: Merredin District Rare Flora and Communities Recovery Team Members 2005.

Name	Organisation
Paul Blechynden	District Manager, CALM Merredin
David Jolliffe (Chair)	District Nature Conservation Officer, CALM Merredin
Joel Collins	Conservation Officer, CALM Merredin
Andrew Brown	Threatened Flora Coordinator, CALM Species and Communities Branch
Brett Beecham	Regional Ecologist, CALM Narrogin
Rosemarie Rees	CALM, Species and Communities Branch
Gillian Stack	CALM, Species and Communities Branch
Leonie Monks	CALM Science Division
Andrew Crawford	CALM, Threatened Flora Seed Centre
Bob Dixon	Botanic Gardens and Parks Authority
Mary Squire	Community Representative
Robert and Beth Boase	Community Representatives
Larry Trinder	Main Roads WA
Wongan-Ballidu Bushcare Group - All Members	Wongan-Ballidu Bushcare Group
Rob Waller	Water Corporation
Bruce Eldgride	WestNet Rail
John Stevens	WestNet Rail
Vanessa Malcolm	Community Landcare Coordinator (Goomalling/Dowerin)
Linda Vernon	Community Landcare Coordinator (Trayning)
Pauline Guest	Community Landcare Coordinator (Westonia)

3.3 Recovery Team Meetings

The Merredin District Threatened Flora and Communities Recovery Team held two meetings in 2005.

The first meeting was held on the 30th May at Dowerin Shire Chambers with 17 members attending, including Les Crichton (CEO, Shire of Dowerin) and Graham McKenna (Works supervisor, Shire of Dowerin). This meeting provided an excellent opportunity to discuss rare flora management within the Shire. The recovery team presented the Shire with a series of rare flora shire maps and the publication 'WA's Threatened Flora' to assist in rare flora management. After the meeting, field visits were made to the Dowerin rare flora garden, and to the property of Robert and Beth Boase to view the Threatened Ecological Community (TEC) – natural organic saline seep and the DRF population – *Verticordia hughanii*.



Figure 3: Recovery team members inspecting the *Verticordia hughanii* population on private property May 30th 2005

The second meeting was held on the 14th of December at Wongan Hills with 12 members attending. This meeting included an update from Bob Dixon (Botanic Gardens and Parks Authority) on the *Eremophila resinosa* (DRF) translocation at Westonia. This project has been a great success with over 80% of seedlings surviving the first year. The recovery team presented the Shire of Wongan-Ballidu with a series of rare flora shire maps and the publication 'WA's Threatened Flora' to assist them in rare flora management. After the meeting, field visits were undertaken to a number of DRF sites, with significant seed collections made from *Acacia pharangites* (2 sites), *Daviesia euphorbioides* and *Lysiosepalum abollatum*.



Figure 4: Recovery team member's collecting seed from *Acacia pharangites* on private property:
(Photo: Joel Collins)

4. **Funding**

4.1 Avon Catchment Council Funding

The Avon Catchment Council (ACC) provided threatened flora funding for the Wheatbelt Region, with the Merredin District receiving funding for coordination and implementation of the rare flora management program. All projects were implemented during the period November 2004 to June 2005 with periodic reports submitted to the ACC. Please refer to the table below for a summary of projects completed by June 2005.

Table 2: ACC projects completed by June 2005.

Production of Rare Flora Information Packs for the 16 Shires in the Merredin District. Packs include 1) office (A1 size) and vehicle laminated (A4) maps indicating locations and names of threatened flora, and 2) the publication 'Western Australia's Threatened Flora'.
Laminated aerial maps of 5 reserves in the Shire of Wongan-Ballidu that contain several populations of threatened flora. These maps were presented to the Wongan-Ballidu Bushcare Group to assist in threatened flora management.
DRF survey (<i>Grevillea dryandroides</i> subsp. <i>dryandroides</i>) with 17 volunteers from the Wongan-Ballidu Bushcare Group at the townsite of Ballidu with a BBQ lunch.
Materials to expand the Merredin District Herbarium
Fencing for the <i>Daviesia euphorbioides</i> translocation site at Hindmarsh N/R in the Shire of Dowerin
Payment of threatened flora seedlings (BGPA) for the Rare Flora Gardens at Goomalling and Dowerin

5. Species and Communities Branch – Interim Recovery Plans (IRP`s)

The following IRP's are waiting for sign-off by the Region:

- *Acacia lobulata* (EN)
- *Eremophila virens* (EN)
- *Grevillea dryandroides* subsp. *hirsuta* (VU)
- *Roycea pycnophylloides* (VU)

The following IRP's are currently being prepared / updated by Species and Communities Branch/Merredin District staff:

- *Acacia sciophanes* (CR)
- *Hemiandra rutilans* (CR)
- *Pityrodia scabra* (VU)
- *Acacia pharangites* (CR)
- *Cyphanthera odgersii* subsp. *occidentalis* (CR)
- *Haloragis platycarpa* (CR)
- *Daviesia cunderdin* (CR)
- *Gastrolobium glaucum* (CR)
- *Frankenia parvula* (EN)
- *Frankenia conferta* (CR)

6. Merredin District threatened flora management program

6.1 Merredin District Threatened Flora Schedule

DRF and Priority taxa currently listed in the Merredin District as at 19th July 2004 are as follows:

1. Declared Rare Flora

- 29 Critical
- 20 Endangered
- 18 Vulnerable

2. Priority Flora

- 53 Priority 1
- 54 Priority 2
- 85 Priority 3
- 34 Priority 4

(Please refer to Appendix 2 for the complete list of threatened taxa in the Merredin District)

7. Implementation of Recovery Actions

The following information provides an outline of recovery actions implemented during the period January 2005 to December 2005.

7.1 *Critically Endangered*

Acacia pharangites

- Surveyed and recorded new population at Wongan Hills N/R (Mt Matilda) with Wongan Ballidu Bushcare Group volunteers.
- Collected seed from populations 1A and new population at Wongan Hills N/R for CALM's Threatened Flora Seed Centre.
- Inspected population 1A with the Merredin District Threatened Flora and Communities Recovery Team, December 14th.
- Reviewed draft Interim Recovery Plan 2005.

Acacia sciophanes

- Liaison with the works supervisor from Mukinbudin Shire to protect population 1B from road works.
- Reviewed draft Interim Recovery Plan 2005.

Acacia vassalii

- Surveyed and recorded a new population on the Waddington-Wongan Hills road, installed markers and contacted the Local Government Agency (LGA). Specimen sent to Perth herbarium.
- Collected specimen for Merredin district herbarium.
- Installed DRF markers at population 6A.
- Monitored population 6D and processed application to take from the Wongan-Ballidu Development Group Inc.

Comment [AB1]: Who is this?

Acacia volubilis

- Surveyed and recorded a new population on the Harris Back road, installed DRF markers and contacted LGA.
- Monitored and hand-weeded translocation site.
- Monitored 11 populations and replaced / repositioned DRF markers where required.
- Carried out weed control at population 1B (herbicide).
- Opportunistic road-side surveys for new populations.
- Collected specimen for the Merredin district herbarium.

Comment [AB2]: Who?

Caladenia drakeoides

- Surveyed for new populations at water reserve 21148 in Dalwallinu with Andrew Brown.
- Opportunistic inspection of population 14 and liaised with landholder regarding the population (no Rare Flora Recovery Report Form) completed as it was post-flowering).

Comment [AB3]: Don't understand. What does this mean?

Cyphanthera odgersii subsp. *occidentalis*

- Monitored 2 populations.

Daviesia cunderdin

- Monitored and hand-weeded translocation site.
- Removed old shade cloth enclosure.
- Carried out weed control (herbicide).
- Collected seed from population 1 for CALM seed store.
- Opportunistic road-side surveys for new populations.
- Collected specimen for the Merredin district herbarium.
- Liaised with adjoining landholder regarding herbicide spray drift.

Daviesia euphorbioides

- Completion of translocation proposal and successful implementation including fencing, reticulation, planting and monitoring at Hind Marsh N/R.
- Implemented an induced recruitment burn at population 7 with the successful germination of 26 seedlings. Weed control carried out at population 7 (hand-weeding and herbicide). Monitoring and watering of seedlings carried-out regularly. Wire mesh fencing installed around seedlings for protection.
- Survey and recorded new population at Ward Rd Dowerin, installed DRF markers and contacted LGA.
- Monitored 10 populations at installed / replaced DRF markers where required.
- Removed old shade cloth enclosure at population 7.
- Collected seed from population 7 and 1B for the CALM seed store.
- Inspected population 1B with the Merredin District Rare Flora Recovery Team, December 14th.

Daviesia microcarpa

- Monitored population 2 and surveyed for new populations at Southern Cross. One additional plant recorded close to population 2.
- Liaised with the Environmental officer and Manager from St Barbara Mining Company regarding population 2 and its protection.
- Memo completed detailing recovery actions that are required for the population.

Eremophila pinnatifida

- Replaced DRF markers at population 4.
- Surveyed 14 km of the west end of Bell road for new populations.
- Collected specimen for the Merredin district herbarium.

Frankenia conferta

- Reviewed draft Interim Recovery Plan 2005.

Gastrolobium glaucum

- On-site meeting with Telstra contractor at population 1B (and *Gastrolobium hamulosum* population 1A) regarding works within DRF area. Alternative proposal negotiated without the need for clearing and application to take DRF.

Gastrolobium hamulosum

- On-site meeting with Telstra contractor at population 1A (and *Gastrolobium glaucum* population 1B) regarding works within DRF area. Alternative proposal negotiated without the need for clearing and application to take DRF.

Grevillea dryandroides subsp. *dryandroides*

- Coordinated a volunteer survey with the Wongan Ballidu Bushcare Group at Ballidu golf course resulting in the discovery of a new sub-population.
- Surveyed and recorded an additional new sub-population at Ballidu golf course. Liaised with the Ballidu golf club manager regarding the protection of the plants.
- Monitored population 3B & 4A.
- Liaised with a Telstra contractor regarding under-ground wire installation at Ballidu.

Guichenotia seorsiflora ms

- Monitored population 4A & 4B.
- Installed DRF markers at population 4B.

Haloragis platycarpa

- Surveyed for population 1 at Dalwallinu with Andrew Brown. No plants were found which could be an indication that the population is waiting for suitable conditions to regenerate from seed.

Lysiosepalum abollatum

- Collected seed from population 1A for CALM seed store.
- Inspected population 1A with the Merredin District Rare Flora Recovery Team December 14th.

7.2 Endangered*Acacia ataxiphylla* subsp. *magna*

- Surveyed and recorded new population near Goomalling, installed DRF markers and contacted LGA. Specimen sent to Perth herbarium.
- Collected specimen for Merredin district herbarium.
- Monitored population 9 & 11.
- Collected seed from population 3 for the CALM seed store.

Comment [AB4]: Who?

Acacia lobulata

- Monitored population 3A.

Daviesia dielsii

- Surveyed 14km road reserve (Bell rd Dalwallinu) with discovery of a new population consisting of 2 plants, specimens collected and sent to Perth herbarium. DRF Markers installed.
- On-site meeting with Dalwallinu CEO, Dalwallinu Works Supervisor and CALM Roadside Conservation Committee regarding DRF locations and protecting the DRF plants during road vegetation clearing on Bell road.
- Monitored population 1, repositioned DRF markers.
- Collected specimen for Merredin district herbarium.

Eremophila resinosa

- Monitored 14 populations and replaced / repositioned DRF markers where required.

- Liaised with Westonia CLC and Botanic Gardens and Parks Authority regarding the translocation site at Westonia.
- Liaised with the Westonia works supervisor regarding the repositioning of markers in the Westonia shire.

Eremophila virens

- Collected specimen for the Merredin district herbarium.

Eremophila viscida

- On-site meeting with Western Power contractor regarding works within DRF area at population 11A and 11B.
- Monitored 4 populations and replaced / repositioned DRF markers where required.
- Follow-up work at population 14C (Kate Brunt burn trail May 2003), no seedlings survived, packed up reticulation and brought back water tank.

Eucalyptus crucis subsp. *crucis*

- Inspected population 1 Sandford Rocks NR, collected specimen for Merredin district herbarium.

Frankenia parvula

- Reviewed draft Interim Recovery Plan 2005.

Grevillea bracteosa

- Surveyed 14km road reserve (Bell rd Dalwallinu) with discovery of a new population consisting of 1 plant, specimens collected and sent to Perth herbarium. DRF Markers installed.
- On-site meeting with Dalwallinu CEO, Dalwallinu works supervisor and CALM Roadside Conservation Committee regarding DRF locations and retaining the DRF plant during road vegetation clearing on Bell road. Negotiated with Shire to allow the DRF plant to be pruned back allowing for commencement of road works.
- Collected specimen for the Merredin district herbarium.

Hakea aculeata

- Monitored population 22A and 28, replaced / repositioned DRF markers where required.

Melaleuca sciotostyla

- Reporting of new population by Ian Smith (Wongan-Ballidu Bushcare Group volunteer) on private property at Cadoux.

Verticordia hughanii

- Monitored population 1 and liaised with Operations Officer regarding additional installation of bollards to reduce vehicle damage at Hindmarsh N/R.
- Inspected population 2 with the Merredin District Rare Flora Recovery Team, May 30th. Supplied herbicide to Robert Boase to enable spot weed control around the population.

7.3 Vulnerable

Acacia denticulosa

- Monitored population 1B. Recent road grading had resulted in the emergence of new seedlings, a new notification letter sent out from Wildlife Branch to the Shire. New DRF markers installed.

Banksia sphaerocarpa var. *dolichostyla*

- New population discovered - UCL in the Holleaton area - Shire of Yilgarn, collection sent to Perth herbarium. This DRF survey was required through the District's fire-break clearing program.

Eremophila vernicosa

- Joint survey involving Andrew Brown (Species and Communities Branch) and Gina Broun (Moora District) resulting in the discovery of a new population in the Shire of Dalwallinu (1st sub-population private property & 2nd sub-population shire road reserve). Liaised with the private property owner regarding the DRF location.
- Opportunistic surveys in similar habitat in the Dalwallinu – Kalannie area.
- Collected specimen for the Merredin district herbarium.

Grevillea dryandroides subsp. *hirsuta*

- Monitored 2 populations and installed markers were required.
- Surveyed 2 ha at Durokoppin N/R (population 6) and recorded a new sub-population consisting of 30 plants.
- Seed collection at Cadoux railway line (population 4B) as part of Westnet Rail conservation off-set funding.
- Liaised with John Stevens (Westnet Rail) regarding fencing population 9.

Microcorys eremophiloides

- New population recorded at Wongan Hills NR, consisting of 2 plants.

Pityrodia scabra

- Surveyed and monitored all known populations.
- Liaised with private property owner (population 14) regarding fencing of remnant bushland containing the population. Donation of fencing material enabling the owner to fence the remaining 550 metres.
- Seed collection at population 14 and 1T using seed-bags.
- Completed a memo detailing the recommended recovery actions for the species.

Stylidium merrallii

- New population surveyed at Billyacatting Hill reserve, specimens collected for Perth and Merredin district herbarium.

7.4 *Priority One species*

Acacia caesariata

- District Nature Conservation Officer (DNCO) liaised with the Shire of Trayning regarding the removal of up to 10 plants at population 1 for the purpose of road widening. DNCO also undertook a number of surveys of the surrounding areas with similar habitat in search for additional unknown populations. No additional populations located. The upgrading of this species from Priority 1 to DRF will be considered early 2006.
- Collected specimen for the Merredin herbarium.

Dampiera glabrescens

- New population recorded in the Shire of Dalwallinu on Bell road.
- Informed the Shire of the location and liaised to protect the plants during upcoming road works.
- Specimen sent to the Perth herbarium.

7.5 *Priority Two species*

Acacia lirellata subsp. *compressa*

- New populations recorded in the Shire of Dowerin on Hudson road, Reserve 4240 Shire of Dowerin, and Morrison road Shire of Kellerberrin.
- Specimens sent to the Perth herbarium.
- Seed collected from Hudson road population for the CALM seed store and Dowerin / Goomalling rare flora gardens.

Eremophila adenotricha

- Completed RFRF for population recorded on Holleton road, Shire of Yilgarn.
- Collected specimen for the Merredin district herbarium.

Eremophila sargentii

- Monitored population 4 within the Shire of Dalwallinu.
- Collected specimen for the Merredin district herbarium.

7.6 *Priority Three species*

Gastrolobium spectabile

- Completed RFRF for population at Billyacatting Hill reserve, Shire of Trayning.
- Specimen collected for the Merredin district herbarium.

Eucalyptus macrocarpa x *pyriformis*

- Monitored population 6 within the Shire of Goomalling.

Grevillea roycei

- Completed RFRF for population at Hindmarsh N/R, Shire of Dowerin.
- Collected specimen for Merredin district herbarium.

8. Translocations

Daviesia euphorbioides

- Joint project between Species and Communities Branch (Gillian Stack), Science Division (Leonie Monks) and CALM Merredin district (Joel Collins).
- Completed and obtained endorsement of the amended translocation proposal.
- Planting of 75 seedlings at Hindmarsh N/R took place on the 25th August 2005.
- Successful completion of rabbit-proof fencing around the site and drip irrigation to water the plants during the first summer.
- Monitoring undertaken annually for survival / growth rates and regular monitoring of reticulation during November 2005 and April 2006.

Daviesia cunderdin and *Acacia volubilis*

- Monitoring of 2003 translocation on the 3rd of March 2005.
- Seed collection of *Daviesia cunderdin* on the 13th of September 2005 to enable the continuing seedling translocations over successive years.
- Seedlings of both *Acacia volubilis* and *Daviesia cunderdin* sent to the Botanic Gardens and Parks Authority nursery to grow-on for 2006 re-stocking of translocation.

Pityrodia scabra

- Monitored past translocation sites (population 1T and 4T).
- Seed bags were placed on plants at population 1T translocation site on November, 3rd 2005.

Grevillea dryandroides subsp. *dryandroides*

- Monitoring past translocation site (population 4T).
- Collected water tank and reticulation equipment from translocation site 4T.



Figure 5: Leonie Monks and Gillian Stack recording plant measurements at the *Daviesia euphorbioides* translocation 25th August 2005.

9. Induced Recruitment Burns

Daviesia euphorbioides

- Successful implementation of prescribed burn at population 7, Shire of Dowerin.
- Germination of 25 seedlings during winter 2005.
- Weed control carried-out regularly over winter and spring (herbicide spraying and hand-weeding).
- Regular hand watering of seedlings commencing from November 2005.
- Fencing of seedlings to protect from vermin / stock damage.

Eremophila viscida

- Monitoring of the burn trail undertaken in 2003 by Kate Brunt (population 14C)
- No seedlings recorded in this burn trail site.
- Brought back reticulation and water tank.



Figure 6: *Daviesia euphorbioides* seedlings 6 months post recruitment burn.

10. Rare Flora Gardens

Goomalling and Dowerin

- Joint project between the Shires of Goomalling and Dowerin, Vanessa Malcolm (CLC) and CALM Merredin district.
- Planting and reticulation completed by November 2005.
- Rare flora garden signs developed and produced (funded by the Avon Catchment Council).

Wongan Hills

- Maintenance of the garden was undertaken by members of the Wongan-Ballidu Bushcare Group during 2005.

Dalwallinu and Westonia

- Expression of interest for the establishment of rare flora gardens with rare flora garden proposals being written for 2006 by Pauline Guest (CLC-Westonia)



Figure 7: Dowerin rare flora garden December 2005

11. Application To Take Declared Rare Flora (DRF)

The following species have had applications to take completed in 2005:

- *Acacia vassalii* – 9 plants at population 6D, Wongan Hills.
- *Grevillea bracteosa* – pruning completed by Conservation Officer (Joel Collins) at new population on Bell road Dalwallinu.

Liaison with the relevant agency has resulted in the avoidance of an application to take for the following species (with the proponent indicated in brackets):

- *Daviesia dielsii* – 3 plants on Bell road Dalwallinu (Shire of Dalwallinu).
- *Grevillea bracteosa* – 1 plant on Bell road Dalwallinu (Shire of Dalwallinu).
- *Acacia sciophanes* – 1 plant at population 1B (Shire of Mukinbudin)
- *Eremophila viscida* – population 11A/11B (Western Power)
- *Grevillea dryandroides* subsp. *dryandroides* – several populations at Ballidu (Telstra)
- *Gastrolobium hamulosum* – population 1A (Telstra)
- *Gastrolobium glaucum* – population 1B (Telstra)

12. Education and Publicity

The following activities have taken place in order to increase community awareness of threatened flora within the Merredin District:

- Rare flora volunteer survey with the Wongan-Ballidu Bushcare Group on the 19th of June 2005 at Ballidu golf course. The survey targeted *Grevillea dryandroides* subsp. *dryandroides* with 1 new sub-population discovered. Seventeen volunteers participated with a BBQ lunch provided by CALM.

- Rare flora poster developed for the Dowerin Field Days with a Merredin District display set up for the 30th of August – 1st September 2005.
- One article in the Wongan-Ballidu newspaper 'Wongan Boomer'.
- Two editions of the Merredin District rare flora newsletter 'Diversity' (please refer to *Appendix 2* for the winter and spring 2005 editions).
- Rare flora garden signs completed for the Dowerin and Goomalling rare flora gardens.
- Rare flora A4 posters distributed to shire buildings, tourist centres and community groups through-out 2005.
- Production of Rare Flora Information Packs for the 16 Shires in the Merredin District. Information packs include: 1) office (A1 size) and vehicle laminated maps (A 4 size) indicating locations and names of threatened flora; and 2) publication 'Western Australia's Threatened Flora'. Maps and books have been presented to the Shires of Dowerin, Goomalling, Wongan-Ballidu, Trayning, Wyalkatchem and Dalwallinu during 2005.
- Two rare flora presentations to the Toodyay Naturalist Club.
- On-going liaison with LGA on rare flora locations and management.
- Rare flora presentation at the CALM Regional Conference.

13. Merredin District Threatened Flora Herbarium

A threatened flora herbarium has been established at the Merredin district office in order to assist with the management of threatened flora in the Merredin district. This Herbarium will provide a resource for CALM staff, volunteers and community. The collection and curation of a 12 DRF species and 5 priority species occurred during 2005.

14. Conclusion

The Conservation Officer (Flora) has been able to implement a number of recovery actions for a range of DRF and Priority flora species. It is important that this momentum is maintained during the future years.

The CALM Merredin district recovery team members would like to thank all the agencies, local community members and other CALM staff who have contributed to the implementation of recovery actions within the CALM Merredin District throughout 2005. This assistance, co-operation and actions have made a significant contribution to the conservation of the Wheatbelt's threatened flora and communities.

15. References

- Mollemans F.H., Brown P.H., & Coates D.J. 1993, *Declared Rare Flora and Other Plants in Need of Special Protection in the Merredin District*, Wildlife Management Program No 9, Department of Conservation and Land Management, Wanneroo.

Appendix 1: Threatened Flora List Merredin District 2005

Taxa currently listed in the Merredin District as at February 2005 are as follows:

Total DRF listed: 69 taxa

DRF MERREDIN DISTRICT (CR)
<i>Acacia cochlocarpa</i> subsp. <i>velutinos</i>
<i>Acacia pharangites</i>
<i>Acacia sciophanes</i>
<i>Acacia subflexuosa</i> subsp. <i>capillata</i>
<i>Acacia vassalii</i>
<i>Acacia volubilis</i>
<i>Caladenia drakeoides</i>
<i>Cyphanthera odgersii</i> subsp. <i>occidentalis</i>
<i>Daviesia cunderdin</i>
<i>Daviesia euphorbioides</i>
<i>Daviesia microcarpa</i>
<i>Eremophila pinnatifida</i> ms
<i>Frankenia conferta</i>
<i>Gastrolobium diablophyllum</i>
<i>Gastrolobium glaucum</i>
<i>Gastrolobium hamulosum</i>
<i>Grevillea dryandroides</i> subsp. <i>dryandroides</i>
<i>Grevillea pythara</i>
<i>Guichenotia seorsiflora</i> ms
<i>Gyrostemon reticulatus</i>
<i>Haloragis platycarpa</i>
<i>Hemiandra rutilans</i>
<i>Isopogon robustus</i> ms
<i>Lysiosepalum abollatum</i> ms
<i>Philotheca basistyla</i>
<i>Pityrodia axillaris</i>
<i>Rhizanthella gardneri</i>
<i>Tetratheca deltoidea</i>
<i>Verticordia staminosa</i> subsp. <i>staminosa</i>
TOTAL DRF CRITICAL (29)

DRF MERREDIN DISTRICT (EN)
Acacia ataxiphylla subsp. magna
Acacia lobulata
Acacia pygmaea
Centrolepis caespitosa
Conostylis wonganensis
Daviesia dielsii
Eremophila resinosa
Eremophila virens
Eremophila viscida
Eucalyptus brevipes
Eucalyptus crucis subsp. crucis
Frankenia parvula
Grevillea christineae
Grevillea bracteosa
Hakea aculeata
Melaleuca sciotostyla
Philotheca wonganensis
Ptilotus fasciculatus
Stylidium coroniforme
Verticordia hughanii
TOTAL DRF ENDANGERED (20)

DRF MERREDIN DISTRICT (VU)
Acacia denticulosa
Acacia lanuginophylla
Allocasuarina fibrosa
Banksia sphaerocarpa var. dolichostyla
Boronia adamsiana
Eremophila ternifolia
Eremophila vernicosa ms
Eucalyptus recta
Eucalyptus synandra
Gastrolobium graniticum
Grevillea dryandroides subsp. hirsuta
Microcorys eremophiloides
Muelleranthus crenulatus
Myriophyllum lapidicola

Pityrodia scabra
Rhagodia acicularis
Roycea pycnophylloides
Stylidium merrallii
TOTAL DRF VULNERABLE (18)

DRF MERREDIN DISTRICT (EX)
Philotheca falcata
Thomasia gardneri
TOTAL EXTINCT (2)

Total Priority 1-4 Taxa Listed: 228

PRIORITY 1 FLORA SPECIES: MERREDIN DISTRICT
Acacia caesariata
Acacia desertorum var. nudipes
Acacia inceana subsp. latifolia ms
Acacia sclerophylla var. teretiuscula
Acacia sp. Goodlands (BR Maslin 7761) [aff. resinosa]
Acacia sp. Kalannie North (BR Maslin 7702) [aff. baxteri]
Acacia sp. Kalannie North East (BR Maslin 7519) [aff. rigens]
Acacia sp. Manmanning (BR Maslin 7711) [aff. multispicata]
Acacia sp. Petruder Rocks (BR Maslin 7714) [aff. ancistrophylla]
Acacia stanleyi ms
Acacia trinalis
Acacia websteri
Baeckea sp. Baladjie (PJ Spencer 24)
Baeckea sp. Beringbooding (AR Main 11/9/1957)
Baeckea sp. Koorda (WE Blackall 3371)
Baeckea sp. Stockton Road (ME Trudgen MET22077 & B Rye)
Baeckea sp. Wialki (GM Storr 4/10/1958)
Baeckea sp. Yacke Yackine Dam (KR Newbey 9195)
Caladenia ornata x
Calandrinia sp. Piawaning (A.C.Beauglehole 12257)
Conospermum galeatum
Conostylis caricina subsp. elachys
Dampiera glabrescens
Dampiera scaevolina
Drummondia wilsonii
Eucalyptus subangusta subsp. virescens
Euryomyrtus ciliata ms
Frankenia bracteata
Goodenia heatheriana
Grevillea lissopleura
Grevillea marriottii
Grevillea minutiflora
Grevillea pinifolia
Grevillea squiresae
Guichenotia glandulosa
Halosarcia flabelliformis
Leucopogon sp. Parker Range (FH & MP Mollemans 2860)
Melaleuca grieviana
Melaleuca manglesii
Millotia newbeyi
Mirbelia taxifolia
Phebalium drummondii
Philotheca langei
Pityrodia sp. Dalwallinu (M Hislop 1860)
Pseudactinia sp. Bungalbin Hill (FH & MP Mollemans 3069) [aff. Melichrus]
Scaevola tortuosa
Schoenus pennisetis
Scholtzia eatoniana
Tricoryne tuberosa ms
Trymalium densiflorum

Urodon sp. Narkal (BH Smith 1440)
Verticordia roei subsp. meigona
Vittadinia cervicularis var. oldfieldii
TOTAL P1 (53)
<u>PRIORITY 2 FLORA SPECIES: MERREDIN DISTRICT</u>
Acacia ascendens
Acacia asepala
Acacia concolorans
Acacia congesta subsp. wonganensis
Acacia cowaniana
Acacia drewiana subsp. minor
Acacia dura
Acacia lirellata subsp. compressa
Acacia sclerophylla var. pilosa
Acacia subrigida
Acacia synoria ms
Aluta aspera subsp. localis
Baeckea sp. North Ironcap (RJ Cranfield 10580)
Boronia ericifolia
Bossiaea cucullata
Brachysola halganiacea
Calytrix parvivalis
Conostylis albescens
Dryandra speciosa subsp. speciosa
Eremophila brevifolia
Eremophila adenotricha
Eremophila complanata ms
Eremophila sargentii
Eucalyptus educta
Fitzwillia axilliflora
Frankenia brachyphylla
Grevillea biformis subsp. cymbiformis
Grevillea kenneallyi
Grevillea nana subsp. abbreviata
Grevillea rosieri
Hakea pendens
Hakea rigida
Hibbertia glabriuscula
Jacksonia rubra ms
Lepidium genistoides
Lepidium merrallii
Leucopogon amplexans
Leucopogon sp. Bungulla (RD Royce 3435)
Lissanthe scabra
Logania exilis
Melaleuca viminea subsp. appressa
Podotheca pritzelii
Schoenus griffinianus
Scholtzia sp. Gunyidi (JD Briggs 1721)
Stenanthemum grandiflorum ms
Stylidium chiddarcoopingense
Stylidium choreanthum

Stylidium pseudosacculatum
Stylidium thylax ms
Synaphea tamminensis
Tricoryne arenicola ms
Verticordia dasystylis subsp. dasystylis
Verticordia multiflora subsp. solox
Verticordia pulchella
Verticordia wonganensis
TOTAL P2 (55)
PRIORITY 3 FLORA SPECIES: MERREDIN DISTRICT
Acacia ancistrophylla var. perarcuata
Acacia campylophylla
Acacia crenulata
Acacia cylindrica
Acacia deflexa
Acacia dissona var. indoloria
Acacia filifolia
Acacia formidabilis
Acacia isoneura subsp. isoneura
Acacia lirellata subsp. lirellata
Acacia lullfitziorum
Acacia phaeocalyx
Acacia repanda
Acacia scalena
Acacia undosa
Angianthus micropodioides
Anigozanthos bicolor subsp. exstans
Arnocrinum drummondii
Austrostipa blackii
Baeckea sp. Elsewhere Road (ME Trudgen 5420)
Baeckea sp. Hatter Hill (KR Newby 3284)
Baeckea sp. Tammin (R Coveny 8319 & B Habberley)
Banksia lullfitzii
Blennospora phlegmatocarpa
Calandrinia porifera
Calytrix plumulosa
Chamelaucium conostigmum ms
Conospermum eatoniae
Cryptandra dielsii ms
Cryptandra imbricata ms
Cryptandra polyclada subsp. polyclada
Daviesia debilior subsp. sinuans
Daviesia uncinata
Dryandra horrida
Dryandra lindleyana subsp. pollostia
Eucalyptus diminuta
Eucalyptus macrocarpa x pyriformis
Eucalyptus mimica subsp. continens
Euryomyrtus leptospermoides
Euryomyrtus recurva
Frankenia glomerata
Gastrolobium spectabile

Geleznovia verrucosa subsp. formosa ms
Gompholobium asperulum
Goodenia perryi
Goodenia trichophylla
Grevillea asparagoides
Grevillea candicans
Grevillea eriobotrya
Grevillea haplantha subsp. recedens
Grevillea pilosa subsp. redacta
Grevillea roycei
Grevillea tenuiloba
Guichenotia impudica ms
Gunniopsis rubra
Hemiandra coccinea
Hibbertia graniticola
Hopkinsia anoetocolea
Isoetes brevicula
Lasiopetalum fitzgibbonii
Lechenaultia galactites ms
Melaleuca sclerophylla
Menkea draboides
Microcorys tenuifolia
Microseris scapigera
Persoonia chapmaniana
Pityrodia sp. Yilgarn
Persoonia pungens
Petrophile pauciflora
Phebalium brachycalyx
Phlegmatospermum drummondii
Prostanthera nanophylla
Psammomoya implexa
Sarcocornia globosa
Stylidium pulviniforme
Synaphea constricta
Tetradlea retrorsa
Thomasia tenuivestita
Thysanotus cymosus
Triglochin stowardii
Urodon capitatus
Verticordia gracilis
Verticordia huegelii var. tridens
Verticordia mitodes
Verticordia stenopetala
Verticordia venusta
TOTAL P3 (86)

PRIORITY 4 MERREDIN DISTRICT
Acacia botrydion
Acacia merrickiae
Acacia semicircularis
Banksia benthamiana

Caladenia cristata
Calamphoreus inflatus
Calothamnus brevifolius
Darwinia sp. Chiddarcooping (SD Hopper 6944) [aff. purpurea]
Daviesia oxylobium
Daviesia spiralis
Drosera graniticola
Dryandra comosa
Dryandra pulchella
Dryandra shanklandiorum
Dryandra wonganensis
Eremophila biserrata
Eremophila caerulea subsp. merrallii ms
Eucalyptus caesia subsp. caesia
Eucalyptus caesia subsp. magna
Eucalyptus georgei subsp. fulgida
Gastrolobium callistachys
Gonocarpus intricatus
Grevillea dissecta
Grevillea prostrata
Grevillea tetrapleura
Hemigenia conferta
Lepidium pseudotasmanicum
Loxocarya albipes
Myriophyllum petraeum
Regelia cymbifolia
Sowerbaea multicaulis
Stenanthemum tridentatum
Stylidium scabridum
Verreauxia verreauxii
TOTAL P4 (34)

Appendix 2: Diversity Newsletter (winter and spring 2005)