

NARROGIN DISTRICT THREATENED FLORA MANAGEMENT PROGRAM

Annual Report 2004

Marie Strelein and Greg Durell
For the Narrogin District Threatened Flora Recovery Team



Department of Conservation and Land Management
PO Box 100 Narrogin WA 6312

SUMMARY 2004

Threatened Flora recovery within the Narrogin District is a collaborative project between the Department of Conservation and Land Management (CALM), the Commonwealth Department of Environment and Heritage (through the NHT program) the Avon Catchment Council (ACC), the Southwest Catchment Council (SWCC), the Botanic Gardens and Parks Authority (BGPA) and the community.

CALM supports the program by providing both direct and indirect funding, including the full time employment of a Conservation Officer. Funds have been received from the Avon and Southwest Catchment Councils through NHT 2 and allocated to on-ground recovery actions. Funding has also been obtained from NHT for the development of Interim Recovery plans for several Narrogin District threatened plant species. The BGPA has provided direct costs to the program for two species recovery projects. The community has provided significant in-kind volunteer support to implement many of the recovery actions.

CALM's Narrogin District manages ten Critically Endangered flora (CR), eleven Endangered flora (EN) and sixteen Vulnerable Flora (VU) flora. All are Declared as Rare Flora under the *Wildlife Conservation Act* (1950). In addition, 213 flora species are listed for the Narrogin District on CALM's Priority Flora List. Many of these require additional monitoring and survey to determine their threatened status.

Highlights of the program for 2004 are:

- A report summarising the *Darwinia carnea* (CR) translocation process from 1997 through to 2004 and assessing whether the translocation has met the aims outlined in the translocation proposal was completed in December 2004 by Leonie Monks. The report also makes recommendations for future management of the translocation sites.
- Continued translocation of *Grevillea scapigera* (CR), with winter planting being carried out at the Corrigin Airstrip site and Hartley's site to improve genetic mix and add new clones. Planting was carried out by BGPA staff, CALM staff and community members from the Corrigin LCDC. BGPA staff also implemented seed predation and seed storage trials at the translocation sites. Root system and herbicide trials for better seedling establishment continue. Weeds such as **Romulea rosea*, **Arcotheca calendula* and **Gynandris setifolia* were controlled. Plants raised from cryostored material produced good quality seed that has germinated. The resulting seedlings will be transplanted during 2005.
- Further development of scientific investigations on *Rhizanthella gardneri* (CR) and its habitat requirements. A PhD student with the University of Western Australia's Ecosystem Research Group, CALM staff, local LCDC members and BGPA have been working together on this Underground Orchid project. In the projects first year the group has progressed development of a proposal for habitat regeneration trials, constructed rabbit exclusion fencing, monitored habitat, designed and installed an information sign with assistance from local school groups and conducted genetic studies on the organism and its host. The orchid has also been propagated and one plant is expected to flower in 2005.
- The translocation of *Symonanthus bancroftii* (CR) into two secure sites continued in partnership with the Bruce Rock Land Conservation District Committee and BGPA. In accordance with the approved Translocation Proposal, a total of 324 seedlings were planted at the Ardath translocation site. Site preparation was improved and

approximately 50% of seedlings have survived compared with very low survival in the past. 1000 micro propagated seedlings are currently being produced for transplanting during 2005.

- A new population of *Verticordia fimbrialepis* subsp. *fimbrialepis* (CR) was discovered in Hotham River Nature Reserve A8291, Cuballing Shire.
- A new population of *Banksia oligantha* (EN) was found on private property near Toolibin Townsite with 188 mature plants and a number of seedlings. The landholder has expressed an interest in selling this remnant for conservation purposes. The Narrogin District considers this a priority for land purchase.
- A disused sandpit near a population of *Jacksonia quairading* ms (EN) in the Quairading Rifle Range Reserve 13002 was rehabilitated in April 2004. Being a disturbance opportunist up to 100 plants of this species now occur in the sandpit. Monitoring of this site will continue.
- A new population of *Pultenaea pauciflora* (VU) was discovered on a road verge in the Williams Shire by flora enthusiasts Greg and Maxine Marston of Boddington. The previously known populations are geographically separated, occurring near Narrogin and in Lupton's Conservation Park (Perth Hills), this new population lies between these existing populations.
- Three species of flora were added to the Narrogin District Declared Rare Flora List. These are: *Caladenia williamsiae* (CR), *Guichenotia seorsiflora* (CR), and *Muelleranthus crenulatus* (VU).

1. Objective

The objective of the Department of Conservation and Land Management's Conserving Biodiversity Output is: "To protect and where possible, restore Western Australia's natural biodiversity."

Strategy 1.4 of CALM's Corporate Plan 2002-2005 is to "Recover threatened flora, fauna and ecological communities." This provides a broad guideline for the Recovery team to determine how to best recover threatened species in the Narrogin District.

Based on these overarching statements the Narrogin District Threatened Flora Management Program aims to:

- ensure through the implementation of recovery actions¹ the continued survival in the wild of populations of threatened flora species and other plants in need of special protection and their associated habitat;
- implement recovery, research and management actions for Critically Endangered (CR), Endangered (EN) and Vulnerable (VU) flora in the Department's Narrogin District;
- assess the status of 213 other poorly known species in the Department's Narrogin District, many of which, may warrant ranking as CR and EN but require further survey;
- implement, under a community based Flora Recovery Team, recovery actions listed in the Narrogin District Wildlife Management Program, Recovery Plans and Interim Recovery plans, and
- promote within the Narrogin District, at the community level, the protection and conservation of the District's remaining biodiversity. This includes the protection of threatened flora and the protection and care of remnant vegetation, on farms and land reserved in government and local government agencies whose primary functions are non-conservation based.

2. Recovery Team

The Narrogin District Threatened Flora Recovery Teams primary focus is the recovery of threatened flora within the Narrogin District. The team is structured to allow for the encouragement, promotion and participation of associated government, community and other groups in the protection of ecosystems across the District. This is done by linking private landowners, community volunteer groups, landcare groups, community catchment groups, local government authorities and other government agencies to carry out recovery projects.

The following are members of the Narrogin District Threatened Flora Recovery Team and represent specific groups or agencies:

¹ The 'recovery process' provides the overall framework for the conservation of threatened species and communities. It can be summarised as:

1. review the conservation status of all species and ecological communities,
2. prepare conservation priority lists of threatened species and ecological communities,
3. where insufficient information exists to prescribe conservation actions, conduct the necessary research,
4. produce costed Recovery Plans, and
5. for each Recovery Plan, obtain funding, implement, and monitor and review implementation.

- 1) Janette Dellabona representing roadside conservation interests of Main Roads WA and local government,
- 2) Robyn Campbell represents central portion of the District in respect to Land Conservation District Committee's,
- 3) Fran Alcock and Shirley Wells represent the South Central Naturalist Club,
- 4) Katherine Miller represents World Wide Fund for Nature Australia,
- 5) Jeanette Buegge and Mark Brown represent the northern portion of the District in respect to Land Conservation District Committee's,
- 6) Bob Dixon and Eric Bunn represent Botanic Gardens and Parks Authority,
- 7) Barbara Black represents the 14 Local Government authorities within the Narrogin District,
- 8) Judy Williams represents the Wildflower Society and the Western Land Conservation District Committee's,
- 9) Bruce McLaren represents the interests of Environment Australia,
- 10) Greg Durell (Chairperson) represents the Narrogin District of the Department of Conservation and Land Management and other controlling government agencies.

The participation of community groups, private land holders, local government agencies and government land managers is essential to ensure the protection of threatened species and the maintenance of biological diversity. The recovery team is structured to enhance the process of regional land recovery through broad community representation.

The Recovery Team also comprises of the following professional advisers:

- 1) Dr Kingsley Dixon, Director of Divisional Plant Science Kings Park and Botanic Gardens; and
- 2) Mr Andrew Brown, Coordinator (Flora) Western Australian Threatened Species and Communities Unit, CALM WATSCU, Woodvale;

Other Technical advisers consulted as a matter of course during the recovery process include:

- 1) Dr David Coates, Senior Principal Research Scientist (Genetics) W.A. Herbarium;
- 2) Dr Ken Atkins, Principal Botanist Nature Conservation Section, CALM Como;
- 3) Mr Brett Beecham, Regional Ecologist, CALM Wheatbelt Region; and
- 4) Ms Sue Patrick, Senior Research Scientist W.A. Herbarium.

The Conservation Officer is responsible for coordinating and implementing recovery actions listed in Recovery and Interim Recovery Plans and the Narrogin District Threatened Flora Management Plan. The Recovery Team assigns priorities for proposed recovery.

The Recovery Team meets twice yearly. In 2004 however, the team met only once at the Botanic Parks and Gardens Authority in Perth on the 5th May 2004, where recovery projects were discussed. The second meeting for 2004 was postponed as the Conservation Officer position was vacant at this time.

3. Staff and Funding

In September 2004, the Narrogin District Conservation Officer, Kim Kershaw, was temporarily deployed to another role in the Department. A 12-month contract for the position was advertised internally as an Expression of Interest in November 2004. The successful applicant, Marie Strelein, commenced in the role on the 10th of January 2005.

The Conservation Officer salary costs are provided from The Department's recurrent budget. Operational costs including vehicle costs and on ground costs are provided through external grants provided through the Avon and South West catchment Council's.

The BGPA provided salary and vehicle costs for their staff from recurrent budgets.

4. Threatened Flora Status for the Narrogin District

The Narrogin District supports ten species of Critically Endangered Flora, eleven Endangered Flora and sixteen Vulnerable Flora. All are Declared as Rare Flora under the *Wildlife Conservation Act* (1950).

213 species are also on CALM's Priority Flora List. Many of these species require significant research to determine their rarity.

The Recovery Team's priorities for 2004 were based primarily on the implementation of recovery actions identified for CR and EN flora. The four highest priority threatened species for the district are summarised in Table One below.

Table 1. Priority threatened species for the Narrogin District.

Species	Ranking	Status
<i>Symonanthus bancroftii</i>	CR	One known plant to exist in the wild. Translocation success is problematic. Success still to be confirmed.
<i>Rhizanthella gardneri</i>	CR	One plant located in 2004 in the Narrogin District. The current research program is continuing.
<i>Grevillea scapigera</i>	CR	Wild plants number only a few. Three translocated populations established in natural species range.
<i>Darwinia carnea</i>	CR	A single known Narrogin wild population exists of approximately 20 plants. Two translocation sites established in more secure sites.

Table 2 provides a brief summary of recovery actions assigned to the recovery team for Critically Endangered Flora for 2004.

Table 2: Recovery Team priorities and description of recovery action status for Critically Endangered (CR) Flora in 2004.

Species	Recovery Actions	Status
<i>Caladenia graniticola</i>	Information dissemination Monitoring Survey Weed control	Completed Completed Not completed Not implemented

	Rabbit control Fencing Research Translocation	Not implemented Not implemented Commence in 2005 Develop proposal 2005
<i>Caladenia williamsiae</i>	Monitoring Survey	Completed Partly complete. Extend search area 2005.
<i>Darwinia carnea</i>	Rabbit control Translocation Genetic analysis Monitoring	Completed Assessment completed. Monitoring to continue. Planting 2005 Taxonomy in 2005 Completed
<i>Dryandra ionthocarpa</i> subsp. <i>chrysophoenix</i>	Monitoring Survey	Not completed Not completed
<i>Eremophila verticillata</i>	Survey	Not completed
<i>Grevillea scapigera</i>	Monitoring Further translocation Research Weed control Ex-situ conservation	Completed Continued at three sites. Monitoring completed Seed trials. Herbicide trials. Seedling establishment trials Completed as part of research program BGPA maintained clonal material
<i>Guichenotia soersiflora</i>	Monitoring Survey	Not completed Not completed
<i>Rhizanthella gardneri</i>	Information dissemination Habitat Rehabilitation Research Monitoring Survey Weed control Fire management strategy Seed & Fungi collections Translocation	Partially completed Partially completed Ex situ cultivation undertaken at BGPA. Habitat degradation research partially completed Not completed Not completed Not completed Not completed Partially completed by UWA Propagation by BGPA
<i>Symonanthus bancroftii</i> .	Monitoring Further translocation Survey Research	Completed Undertaken Undertaken at selected sites Partial completion by BGPA
<i>Verticordia fimbrialepis</i> subsp. <i>fimbrialepis</i>	Information dissemination Monitoring Survey Ex situ conservation Fire management Rabbit control Disease management	Not completed Not completed Completed Seed collection completed Not completed Completed Guidelines to be developed in 2005

5 Critically Endangered Flora

In 2004 ten species, with populations in the Narrogin District were ranked as Critically Endangered:

<i>Caladenia graniticola</i>	<i>Grevillea scapigera</i>
<i>Caladenia williamsiae</i>	<i>Guichenotia soersiflora</i> ms
<i>Darwinia carnea</i>	<i>Rhizanthella gardneri</i>
<i>Dryandra ionthocarpa</i> subsp. <i>chrysophoenix</i>	<i>Symonanthus bancroftii</i>
<i>Eremophila verticillata</i>	<i>Verticordia fimbrialepis</i> subsp. <i>fimbrialepis</i>

A brief summary of the work undertaken to implement identified recovery actions for each species is described below:

5.1 Caladenia graniticola

Monitoring

Monitoring was not conducted at either of the known Narrogin District populations (1 and 2) during 2004.

Further surveys

Surveys will be conducted for this species during 2005.

Research

A project called "*Rescuing Critically Endangered Wheatbelt Orchids*" is externally funded. The recovery team will continue to coordinate this project during 2005.

Translocation

A proposal for translocation of this species will be developed during 2005.

5.2 Caladenia williamsiae

This species was previously listed as Priority 2. A flora nomination form was submitted for consideration at the TSSC meeting proposing that the species be listed as CR. The species was gazetted as DRF in May 2004.

Monitoring and Further Surveys

Monitoring and surveys were conducted on the 29th August 2004. 12 plants were recorded at population 1, 54 plants at population 2 and 9 plants at population 3. The plants and habitat were observed to be in good health however, numbers have decreased since the populations were surveyed in 2003. Surveys were extended through Weam Nature Reserve and nearby Pingeculling Nature Reserve but no new plants were found.

The Threatened Flora Recovery Team agreed that monitoring of the *Caladenia williamsiae* populations and extending the survey area for this species will be a main focus of the 2005 threatened flora management program.

5.3 Darwinia carnea

Information dissemination

An agreement between the Narrogin District and the WA Herbarium during 2004 will see a line drawing of the Narrogin form of *Darwinia carnea* completed in 2005. The drawing, a description of the species and morphological comparisons between the Narrogin and Mogumber forms will be published in *Nuytsia* when completed.

Translocation

A report summarising the *Darwinia carnea* translocation process from 1997 through to 2004 and assessing whether the translocation has met the aims outlined in the translocation proposal was completed in December 2004 by Leonie Monks. The report also makes recommendations for future management of the translocation sites.

Recommendations from the report include further propagation and translocation, trials to grow plants from seed material, summer watering, a comprehensive monitoring program (translocation and natural populations), further detailed assessments of fruit production, storage of seed and additional research. Some of these recommendations will be implemented during 2005.

Monitoring

Population 1 and both translocation sites were monitored during 2004.

5.4 Dryandra ionthocarpa subsp. chrysophoenix

This is a new Critically endangered species for the District, it was previously ranked as Endangered under IUCN guidelines. Four populations currently exist in the District, only one of these occurs on Conservation estate. During 2003 this species was recognised through notice in the Government Gazette to be taxonomically distinct from an Albany population, which is now known as *Dryandra ionthocarpa* subsp. *ionthocarpa*. Detailed surveys of the populations will occur during 2005.

5.5 Eremophila verticillata

No extant populations are currently known to exist in the Narrogin District. The area where the previously known population existed was cleared prior to the species being gazetted. No surveys were completed during 2004.

Consideration is needed whether the population can be recovered at this site through natural regeneration and stock prevention.

5.6 Grevillea scapigera

Monitoring

All populations were monitored in February 2004. Three adult plants and two seedlings were found. These are the only representatives of this species in the wild over the 13 known population sites.

Research Trials.

The Botanic Gardens and Parks Authority (BGPA) continue to undertake research studies. BGPA staff implemented seed storage trials and seed predation trials. A portion of these seeds will be harvested every 2 years to check seed viability over time. A small trial to improve seedling survival rates was also conducted using root air pruning trays. During 2005 the trial and control seedlings will be harvested and their root systems assessed. Herbicide trials continue, with herbicide exposed seedlings planted at one of the translocation sites to assess growth and survival rates.

Translocation

The translocation program for *Grevillea scapigera* continued and has included a number of research trials as outlined above. Winter planting was carried out at the Corrigin Airstrip site and Hartley's to improve genetic mix and add new clones. Plants raised from cryostored material produced good quality seed that has germinated. The resulting seedlings will be transplanted to the Corrigin Airstrip translocation site during 2005.

Weed Control

BGPA staff implemented weed control at Hartley's and Bullaring translocation sites.

Information dissemination

A draft Interim Recovery Plan was completed for this species during 2004.

5.7 Guichenotia soersiflora ms

This species is a new addition to the Narrogin District's Declared Rare Flora list. It was gazetted as Rare Flora by notice in the Government Gazette (July 2004). Five populations of this species are known in the wild and only one of these occurs in the Narrogin District. No surveys or monitoring was conducted during 2004.

5.8 Rhizanthella gardneri

Information dissemination

The Interim Recovery Plan for *Rhizanthella gardneri* is currently being revised.

Community efforts and funding assistance at Babakin have seen the installation of an information sign in the town. Assistance from local school children helped develop the final product which describes the area, the community and raises the awareness of *Rhizanthella gardneri* occurring in the area. The development and installation of the sign was coordinated by Mark Brown of Bruce Rock Landcare and funded by World Wide Fund for Nature WA. An article about the sign and the community involvement was published in a local newspaper.

Research

The Narrogin District, BGPA and the University of Western Australia's Ecosystem Research Group (PhD student) are continuing to conduct scientific investigations on *Rhizanthella gardneri* and its habitat requirements. A meeting was held in February 2004 with representatives from the above agencies to determine directions for the project in the first year. This included developing a proposal for habitat regeneration trials and constructing a rabbit exclusion fence at one research site. Monitoring the habitat of this species has been conducted through measuring the health of the Melaleuca thicket, which includes measuring leaf litter. Establishing irrigation trials, monitoring rainfall and monitoring soil moisture will be part of the 2005 research program.

Rabbit Control

The population at Kunjin was fenced with rabbit exclusion fencing.

Genetic analysis

Genetic studies have been conducted on the species and its host, these will continue during 2005. The orchid has also been propagated with one plant expected to flower in 2005.

Surveys

No further surveys were conducted in 2004.

5.9 Symonanthus bancroftii

Information dissemination

An IRP for *Symonanthus bancroftii* has been completed. An article on Bailey's *Symonanthus* and the translocation plantings appeared in the Merredin Wheatbelt Mercury, July 2004.

Monitoring

Population 1 was monitored in 2004. One plant is known to exist in the wild.

Surveys

Surveys were conducted for *Symonanthus bancroftii* in June 2004. Despite a number of new areas being searched no new plants were found.

Translocation

The translocation of *Symonanthus bancroftii* into two secure sites continued in partnership with the Bruce Rock Land Conservation District Committee and BGPA and some funding from World Wide Fund for Nature Western Australia. A total of 324 seedlings were planted at the Ardath translocation site during 2004. 1000 micro propagated seedlings are currently being produced for transplanting in 2005.

The two translocation sites are monitored a number of times throughout the year. In February 2005 there was approximately 50% seedling survival compared to very low percentage survival from the previous year. Weed control continues to be conducted at both translocation sites.

Research

Research trials are being conducted with the aim of improving seedling establishment, during 2004 this has mainly included potting trials for those seedlings to be planted in 2005.

5.10 Verticordia fimbrialepis subsp. fimbrialepis

Information dissemination and Genetic analysis

Colin Yates from the WA Herbarium is continuing to work on the population biology of this subspecies. Genetic studies were conducted during 2004 to determine the variation between the populations of *Verticordia fimbrialepis subsp. fimbrialepis* as the species occurs in three CALM Districts. Information on the above studies should be available in the near future.

Surveys

Surveys were conducted in early 2004. A new population was found in Hotham River Nature Reserve, Shire of Cuballing.

6. Endangered Flora

In 2004 eleven species, with populations in the Narrogin District were ranked as Endangered:

<i>Acacia insolita</i> subsp. <i>recurva</i>	<i>Jacksonia quairading</i> ms
<i>Banksia cuneata</i>	<i>Lasiopetalum rotundifolium</i>
<i>Banksia oligantha</i>	<i>Ptilotus fasciculatus</i>
<i>Conostylis seorsiflora</i> subsp. <i>trichophylla</i>	<i>Stylidium coroniforme</i>
<i>Grevillea involucrata</i>	<i>Thelymitra stellata</i>
<i>Hakea aculeata</i>	

Priorities for the implementation of recovery actions for each species are ranked on a basis of maintaining or improving their status in the wild. For example, *Banksia cuneata* requires significant management at the local level to maintain population numbers at existing levels whereas *Thelymitra stellata* will only require minimal direct management at the local level.

A summary of actions implemented is described below:

6.1 Acacia insolita subsp. recurva

Information dissemination

A draft IRP is available for this species.

6.2 *Banksia cuneata*

Monitoring

All populations have been monitored in 2004.

Wildfire monitoring continued at the established quadrats in Quairading Common reserve (population 3 was burnt in 1996). Monitoring shows that a high proportion of *B. cuneata* is flowering and setting seed eight years after the fire. Survival of individual *B. cuneata* plants is beginning to plateau to a few individuals per quadrat. Quadrats will continue to be monitored each spring, to compare survival and growth trends with the co-occurring *Banksia prionotes* (Acorn Banksia).

Information dissemination

A census and report on the current status of *Banksia cuneata* populations in the Narrogin District is being compiled. All field related study has been completed. This report will assist with the development of an IRP for this species during 2005.

Negotiation continues with relevant stakeholders to have the Quairading Common reserves as vested as a nature reserve to ensure adequate protection of this species.

Negotiation is also underway with Dept. Main Roads and landholders to implement a revegetation project to help recover this species. A corridor project has been proposed, which enhance the current habitat and allow for movement of pollinators between a translocation site and two extant *Banksia cuneata* populations.

Surveys

An agreement has been obtained to survey and provide landowner advice on managing a recently discovered population on private property in the Cuballing Shire. The population was recently surveyed.

Future Research

The challenge to ensure extant populations of *B. cuneata* to occur into the future is to undertake research to develop suitable techniques using natural processes such as fire as a tool for periodic regeneration. This is the case for most of the larger remnant based populations where the absence of periodic fire is causing a decline in populations.

6.3 *Banksia oligantha*

Surveys and Information dissemination

Monitoring and survey of Narrogin populations was conducted in 2004 to provide information for the development of an IRP. A new population was found on Private property near Toolibin Townsite with 188 mature plants and a number of seedlings. The landholder has expressed interest in selling this remnant for conservation purposes. The Narrogin District considers this a priority for land purchase. The IRP for this species is completed and awaiting approval.

6.4 *Conostylis seorsiflora* subsp. *trichophylla*

No actions were conducted in 2004.

6.5 *Grevillea involucrata*

Monitoring

Populations were monitored in 2004. Plants were only found at one of the four populations.

6.6 Hakea aculeata

No actions were conducted in 2004.

6.7 Jacksonia quairading ms

A disused sandpit near the *Jacksonia quairading ms* population in the Quairading Rifle Range Reserve 13002 was rehabilitated. Follow up monitoring at the site will be required (the species is a disturbance opportunist).

6.8 Lasiopetalum rotundifolium

No actions were conducted in 2004.

6.9 Ptilotus fasciculatus

No actions were undertaken in 2004. Population monitoring and further surveys for this species will be conducted in 2005.

6.10 Stylidium coroniforme

Information dissemination

This species is a new addition to the Narrogin District's list following the submission of a specimen from the Mawson area (Shire of Quairading) to the WA Herbarium. Further collections have also been submitted from a nearby site in the Quairading Shire. The specimens are awaiting confirmation from the WA Herbarium.

6.11 Thelymitra stellata

No actions were conducted in 2004.

7. Vulnerable Flora

Sixteen species, with populations in the Narrogin District were ranked as vulnerable:

<i>Acacia brachypoda</i>	<i>Eucalyptus steedmanii</i>
<i>Allocasuarina fibrosa</i>	<i>Grevillea dryandroides</i> subsp. <i>hirsuta</i>
<i>Allocasuarina tortiramula</i>	<i>Lechenaultia laricina</i>
<i>Banksia sphaerocarpa</i> var. <i>dolichostyla</i>	<i>Muelleranthus crenulatus</i>
<i>Boronia capitata</i> subsp. <i>capitata</i>	<i>Pultenaea pauciflora</i>
<i>Boronia revoluta</i>	<i>Roycea pycnophylloides</i>
<i>Calectasia pignattiana</i>	<i>Thomasia montana</i>
<i>Conostylis rogeri</i>	<i>Verticordia staminosa</i> subsp. <i>cylindraceae</i> var. <i>cylindraceae</i>

As for Section 6, Priorities for the implementation recovery actions for each Vulnerable ranked species is based maintaining or improving their status in the wild. In most cases surveys and monitoring are the main recovery actions undertaken.

A summary of actions during 2004 for each species is described below:

7.1 Acacia brachypoda

No actions were conducted in 2004.

7.2 Allocasuarina fibrosa

No actions were conducted in 2004.

7.3 Allocasuarina tortiramula

Surveys

The single Narrogin population was visited by Carl Beck, Katanning District during 2004. The health of the single plant was observed to be in decline. No further surveys of the surrounding area were conducted.

7.4 Banksia sphaerocarpa var. dolichostyla

Information dissemination

Mineral exploration activities have been conducted in the vicinity of a number of populations in the Forrestania area and District office will continue to liaise with the relevant companies to ensure protection of this DRF species.

7.5 Boronia capitata subsp. capitata

No actions were conducted in 2004.

7.6 Boronia revoluta

Information dissemination

Mineral exploration activities have been conducted in the vicinity of a number of populations in the Forrestania area and District office will continue to liaise with the relevant companies to ensure protection of this DRF species.

7.7 Calectasia pignattiana

Information dissemination

Staff from the Department's Wellington District provided information on a potential population located within the Narrogin District. This information requires follow up.

7.8 Conostylis rogeri

Information dissemination

The Narrogin District assisted in compiling an IRP for this species.

7.9 Eucalyptus steedmanii

This species was nominated for deletion from the DRF list by the Narrogin threatened Flora Recovery Team. The reasons for nomination included that it is more common than previously thought, with over 24,500 plants surveyed in the wild (post-fire regeneration). The species was not deleted from the DRF list.

7.10 Grevillea dryandroides subsp. hirsuta

All Narrogin populations were monitored in February 2004. The survey work assisted with the development of an IRP for this species, now available. The main threats identified were weeds and road maintenance activities.

7.11 Lechenaultia laricina

No actions were conducted in 2004.

7.12 Muelleranthus crenulatus

This species is a new addition to the Narrogin District's Declared Rare Flora list. It was gazetted as Rare Flora by notice in the Government Gazette (July 2004). *Muelleranthus crenulatus* is known only from its type locality in the Narrogin District. No surveys or monitoring were conducted during 2004. Mineral exploration and power line activities have been conducted in the vicinity of this population and the District office will continue to liaise with the relevant companies to ensure protection of this DRF species.

7.13 Pultenaea pauciflora

A new population has been found in the Williams Shire by Greg and Maxine Marston of Boddington. Genetic analysis is still required to provide detailed comparison between the Narrogin populations and those in Lupton's Conservation Park. No other actions were conducted in 2004.

7.14 Roycea pycnophylloides

An IRP has been completed for this species.

7.15 Thomasia montana

No actions were conducted in 2004.

7.16 Verticordia staminosa subsp. cylindraceae var. cylindraceae

Information dissemination

An IRP for this species was approved on 15th June 2004. No other actions were conducted in 2004.

8. Priority Flora Species

Surveys to verify rarity and distribution is the basis for most work undertaken on species listed on the Department's Priority Flora List. These surveys are largely opportunistic except where specific projects are approved to survey for specific species. These are usually Priority 1 and 2 species thought to be significantly rare to progress an application to Declared Rare Status. Information gathered during the survey is used to prepare any application.

8.1 Priority 1 species

In 2004, 36 species, with populations in the Narrogin District were ranked as Priority 1. Surveys were conducted for the following:

Acacia sp. Kulin	
------------------	--

8.2 Priority 2 species

In 2004, 54 species, with populations in the Narrogin District were ranked as Priority 2. No surveys were conducted.

8.3 Priority 3 species

In 2004, 73 species, with populations in the Narrogin District were ranked as Priority 3. Surveys were conducted for the following:

<i>Anigozanthus bicolour</i> subsp. <i>exstans</i>	
--	--

8.4 Priority 4 species

In 2004, 50 species, with populations in the Narrogin District were ranked as Priority 4. Surveys were conducted for the following:

<i>Calothamnus brevifolius</i>	<i>Darwinia</i> sp. <i>Dryandra</i>
--------------------------------	-------------------------------------

9. **Recovery Plan and Interim Recovery Plan status for the Narrogin District species.**

Banksia cuneata has a Recovery Plan (unpublished). Funding is available for a review of this plan with preparation of an Interim Recovery Plan (IRP) scheduled for 2005. The Recovery Plan for *Grevillea scapigera* has been reviewed by the Recovery Team (2003) and the preparation of an IRP followed (draft to be approved).

Current Interim Recovery Plans are published for *Eremophila veneta* ms., *Caladenia graniticola*, *Eremophila verticillata*, *Roycea pycnophylloides*, *Verticordia staminosa* subsp. *cylindrata* var. *cylindrata*, *Verticordia fimbriata* subsp. *fimbriata*, *Rhizanthella gardneri*, *Conostylis rogeri* and *Stylidium coroniforme*.

Interim Recovery Plans are being prepared by the Western Australian Threatened Species and Communities Unit with assistance from the Recovery team for the following species; *Acacia insolita* subsp. *recurva* (in draft), *Banksia oligantha* (draft to be approved), *Darwinia carnea* (in draft), *Conostylis seorsiflora* subsp. *trichophylla* (draft to be approved), *Symonanthus bancroftii* (draft to be approved) and *Grevillea dryandroides* subsp. *hirsuta* (draft to be approved).

10. **Translocations**

Four species translocation projects are being carried out by the Recovery Team. These are *Banksia cuneata*, *Darwinia carnea*, *Grevillea scapigera* and *Symonanthus bancroftii*.

10.1 *Grevillea scapigera*

The translocation program for *Grevillea scapigera* continued. Winter planting was carried out at the Corrigin Airstrip site and Hartley's to improve genetic mix and add new clones. Recent monitoring indicates good survival from the winter plantings. Plants raised from cryostored material produced good quality seed that has germinated. The resulting seedlings will be transplanted to the Corrigin Airstrip translocation site during 2005.

There have been natural recruits at the airstrip site. Seed was collected from the translocation sites for research purposes and storage at the Threatened Flora Seed centre. The older plants at the sites are in general decline and seed production is becoming reduced at two sites. Therefore no further large volumes of seed will be collected, apart from one final seed collection for storage at Hartleys in 2005, after which it will be left to build up the soil seed bank.

The Threatened Flora Recovery team hopes to communicate the success of this species' translocation effort during 2005.

10.2 Darwinia carnea

The establishment of two populations of *Darwinia carnea* on crown land commenced in 1998. Regular monitoring and occasional 'top up' of new seedlings has been occurring at the translocation sites since this establishment.

A report summarising the *Darwinia carnea* translocation process from 1997 through to 2004 and assessing whether the translocation has met the aims outlined in the translocation proposal was completed in December 2004 by Leonie Monks. The report makes recommendations for future management of the translocation sites including, further propagation and translocation, trials to grow plants from seed material, summer watering, a comprehensive monitoring program (translocation and natural populations), further detailed assessments of fruit production, storage of seed and additional research. Some of these recommendations will be implemented during 2005.

Current percentage survival is detailed in the report. In summary, over the three years of planting a total of 255 plants were planted at Penny Block. In May 2004 there were 102 plants surviving, which represents an overall survival of 40%. At the Shire reserve in May 2004, 35 plants survive, which is 20% of the total planted at the site. But survival varied considerably between the different years of planting. The sites do not meet the criterion for failure that was set in 1997 but monitoring, further establishment of under-represented clones and other actions are required to ensure success and recovery.

10.3 Symonanthus bancroftii

The translocation of *Symonanthus bancroftii* into two secure sites continued in partnership with the Bruce Rock Land Conservation District Committee and BGPA and some funding from World Wide Fund for Nature Western Australia. A total of 324 seedlings were planted at the Ardath translocation site during 2004. 1000 micro propagated seedlings are currently being produced for transplanting in 2005. Weed control continues to be conducted at both translocation sites and research trials are being conducted with the aim of improving seedling establishment. During 2004 this has mainly included potting trials for those seedlings to be planted in 2005.

The two translocation sites are monitored a number of times throughout the year. In February 2005 there was approximately 50% seedling survival compared to very low % survival from the previous year. This can be attributed to improved site preparation.

Current survival of the three clones at the Ardath site is as follows:

	Alive	Stressed	Dead	% Alive
SB1	51	1	58	47
SB2	59	2	49	55

10.4 *Banksia cuneata*

A census and report on the current status of *Banksia cuneata* populations and translocation sites in the Narrogin District is being compiled. All field related study has been completed. This report will assist with the development of an IRP for this species during 2005.

As part of the translocation effort for this species negotiation is underway with Main Roads WA and landholders to implement a revegetation project. A corridor project has been proposed, which will enhance the current habitat at the Stacy translocation site and allow for movement of pollinators between this site and two extant *Banksia cuneata* populations.

11. Education, Publicity and Sponsorship

Rhizanthella gardneri community project

Community efforts and funding assistance at Babakin have seen the installation of an information sign in the town. Assistance from local school children helped develop the final product which describes the area, the community and raises the awareness of *Rhizanthella gardneri* occurring in the area. The development and installation of the sign was coordinated by Mark Brown of Bruce Rock Landcare and funded by World Wide Fund for Nature WA. An article about the sign and the community involvement was published in a local newspaper.

Symonanthus bancroftii

An article on Bailey's *Symonanthus* and the translocation plantings appeared in the Merredin Wheatbelt Mercury, July 2004.

12. Conclusion

The Narrogin District Threatened Flora Management Program to recover threatened flora within the Narrogin District continues to be an important program for species (populations) based recovery.

The program focuses on ten species ranked as Critically Endangered with one species, *Symonanthus bancroftii* (Bailey's *Symonanthus*), an extremely rare species with only 1 plant known to exist in the wild. *Grevillea scapigera* (Corrigin Grevillea) and *Rhizanthella gardneri* (Underground Orchid) are also known to be extremely rare with only several individuals known to exist in wild populations.

Through successful species research and collaborative translocations with the Kings Park and Botanic Gardens Authority, CALM and the community, *G. scapigera* now exists in the wild predominantly because of human intervention in cultivating and establishing seedlings.

Successful applications for external funding to NHT to meet annual operational expenses and submitted through regional Catchment Councils will ensure on-ground recovery actions are implemented and local community involved.

By working with the local community members and groups the Narrogin District Threatened Flora Recovery Team implements a well-developed recovery program for the long-term recovery of threatened species over a large, sparsely populated area. Developing links and good relationships with local government authorities, other land management agencies,

landowners, and other community based environment programs significantly contribute towards the success of the recovery program.

Continued support from within the Department is also required for a successful threatened Flora Management Program and this has been shown through commitment to a full time permanent Flora Conservation Officer. However, the Narrogin District Threatened Flora Recovery Team would like to highlight the increasing need for a comprehensive and accessible Departmental Threatened Flora database. It is understood that a Threatened Flora database is being developed by the Department that will be accessible for Regional and District input and allow for inclusion of management and threat information for a species. The progress of this database was discussed at a recent Recovery team meeting with all members showing a high level of support from the District for the continued and expeditious development of this data management system.

Proposed major activities/challenges for the Recovery Team in 2005 include:

- Coordinating and expanding recovery programs into the NRM framework to facilitate the provision of on ground funding.
- Continuing the Translocation Project for *Symonanthus bancrofti*.
- Reviewing species recovery actions for the Narrogin District and re-assigning priorities for the District Flora Management Plan.
- Investigating methodologies to recover *Rhizanthella gardneri* and undertaking habitat rehabilitation.
- Assisting in preparation of a *Banksia cuneata* Interim Recovery Plan.
- Undertaking research on the success and sustainability of *Grevillea scapigera* translocation sites.
- Securing external funding for implementing projects for threatened flora.
- Implementing the proposed *Banksia cuneata* corridor project.
- Continue monitoring, address recommendations and implement further plantings for the translocation of *Darwinia carnea*

Greg Durell
Chairperson
Narrogin District Threatened Flora Recovery Team

Marie Strelein
Conservation Officer
CALM Narrogin District