# ALBANY DISTRICT THREATENED FLORA MANAGEMENT PLAN

**NATURAL HERITAGE TRUST PROJECT 6520**



## ANNUAL REPORT

**1999**

by

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for the Albany District Threatened Flora Recovery Team



Natural Heritage Trust
*Helping Communities Helping Australia*

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## INTRODUCTION

The Albany District Threatened Flora Recovery Team continues to co-ordinate the management actions arising from the Wildlife Management Plan for the Declared Rare and Poorly Known Flora in the Albany District (Robinson and Coates 1995) and Interim Recovery Plans for individual Threatened Species (Appendix 1). The Recovery Team now also coordinates the implementation of the Interim Recovery Plan for the Eastern Stirling Range Montane Heath and Thicket Community, a Critically Endangered Plant Community.

The project currently manages 73 Declared Threatened Flora in the Albany District (Fig. 1) which constitutes 22% of Western Australia's Threatened Flora. Fourteen of these are ranked Critically Endangered, 26 Endangered and 33 Vulnerable with priority management allocated to Critically Endangered species. 334 Priority taxa occur in the District (Fig. 1) and the project aims to assess the status of poorly known Priority 1 and 2 taxa.

One of the most significant threats to the flora of the District continues to be the plant pathogen *Phytophthora cinnamomi* which constitutes the major threat for some 19 of these species. Management of *Phytophthora*, in particular aerial phosphite application and monitoring, is an integral part of the Wildlife Management Plan.

Other key issues are:

- the need for ongoing monitoring of and additional survey for Declared Threatened species as well as Priority 1 and 2 species in a District with 918,195 ha of remnant vegetation of which 476,044 ha occurs in Protected Areas managed by the Dept of Conservation & Land and Management and 442, 150 ha on Shire and other Government Reserves, Vacant Crown land or private property (Fig. 2). The remoteness and rugged terrain of areas of the Conservation Estate such as in the Stirling Range and Fitzgerald River National Parks can make survey and monitoring difficult.
- inadequate knowledge of Threatened Flora distribution on remnant vegetation on private property
- lack of awareness and ownership in the community of Threatened Flora in the District and the threats posed to this flora.

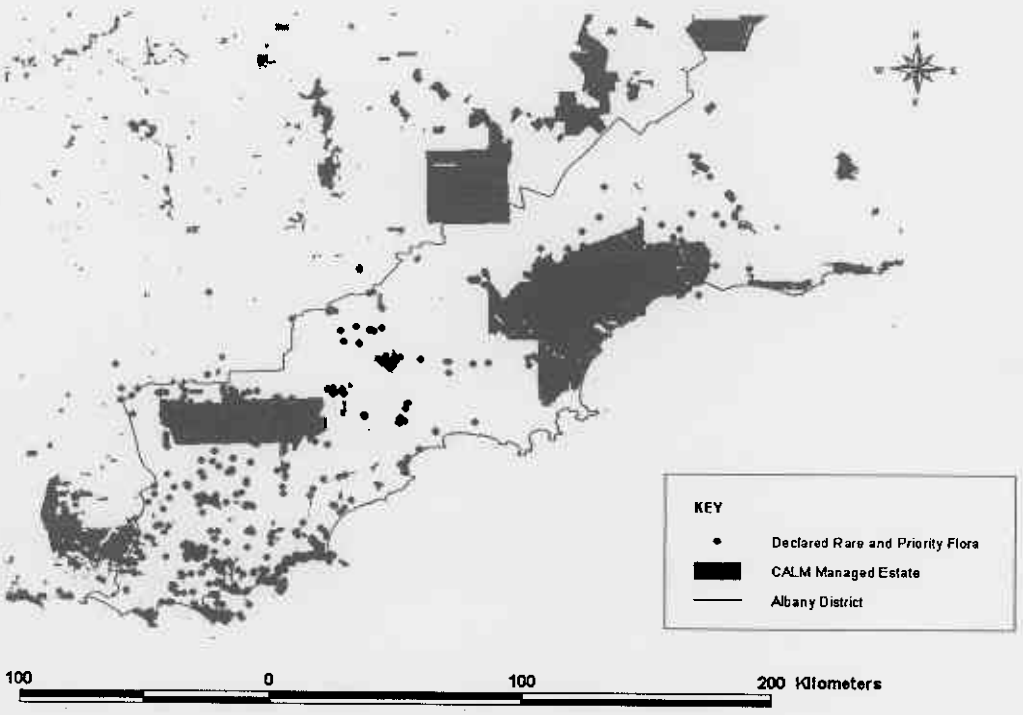


Fig. 1 Declared Rare and Priority Flora in the Albany District. (Map produced by Peter Wilkins, South Coast Region Macro-corridors project).

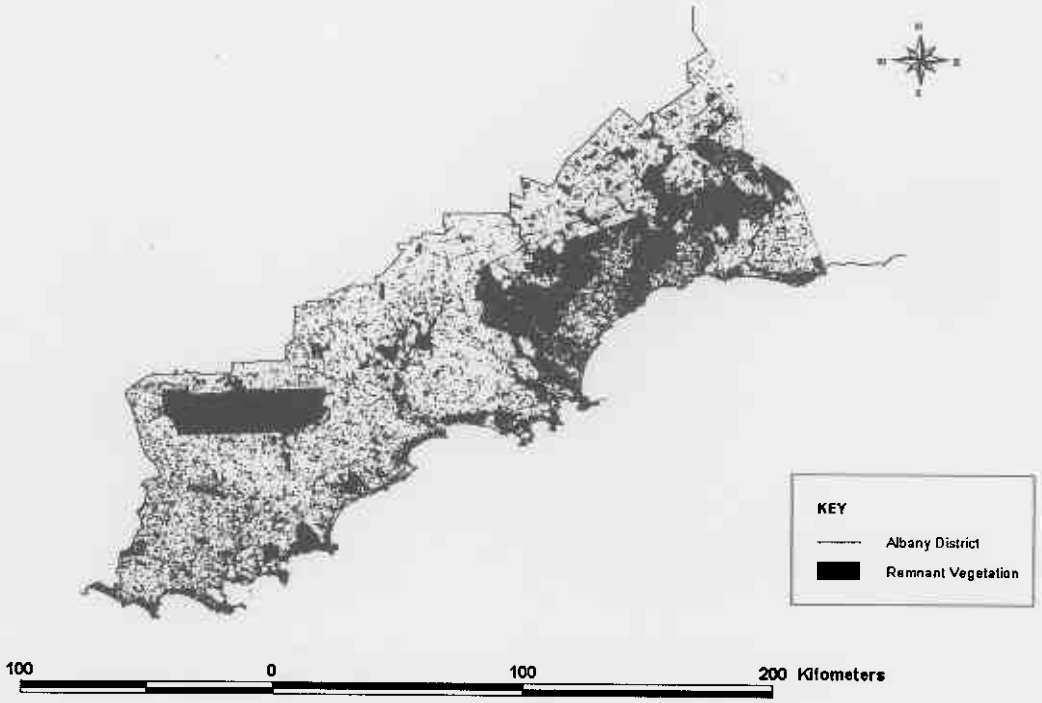


Fig.2 Remnant vegetation (> 50 ha) of the Albany District. (Map produced by Peter Wilkins, South Coast Region Macro-corridors project).

**SCOPE ITEMS ADDRESSED:**

**1 Continue implementation of Phosphite Program for the protection of endangered species and communities from *Phytophthora***

Twenty-one sites containing Critically Endangered or Endangered species were selected for phosphite application in 1999 (Table 1). The impact of *Phytophthora* on Threatened Flora populations was assessed with the assistance of the Albany District Environmental Officer and Dieback Interpreter Dept. of Conservation & Land Management (CALM). Populations were selected for phosphite application based on the predicted impact of *P. cinnamomi* and funds available for the Phosphite program. Six of the 21 sites were within the Critically Endangered Eastern Stirling Montane Community. Nine sites were repeats from the 1998 program that had only received half the proposed application of 12 kg $ha^{-1}$ in autumn 1998 due to bad weather conditions. Four sites were new additions to the program while eight sites were due for re-spray as it was three years since their initial aerial application in 1996.

**Phosphite monitoring**

Monitoring was conducted on sites sprayed in 1996, 1997 and 1998. New monitoring quadrats were established for:

***Darwinia oxylepis*** (Critically Endangered) Baby Barnett population, to monitor the impact of both *Phytophthora cinnamomi* and trampling.

***-Darwinia wittwerorum*** Wittwer's Mountain Bell (Endangered), Talyuberlup population: While regenerating well from fire, this population occurs within a *Phytophthora* infested area and was considered for inclusion in the Phosphite program. Monitoring quadrats were established in *Phytophthora* infested and *Phytophthora* free pockets to establish baseline data for this species.

**Table 1. Targets for the autumn 1999 Phosphite spray program:**

| Location | Area | Declared Rare Flora species treated by Phosphite |
|---|---|---|
| Ellen Peak** | 1ha | *Andersonia axilliflora, Sphenotoma drummondii, Leucopogon gnaphalioides* |
| Ellen/Pyungoorup** Saddle | 1ha | *Andersonia axilliflora, Sphenotoma drummondii, Leucopogon gnaphalioides* |
| Pyungoorup** | 3.5ha | *Andersonia axilliflora, Dryandra montana, Sphenotoma drummondii, Leucopogon gnaphalioides* |
| Bakers Knob** | 3ha | *Andersonia axilliflora, Darwinia collina, Sphenotoma drummondii* |
| Moongoongoonderup W** | 8ha | *Andersonia axilliflora, Banksia brownii, Darwinia squarrosa* |
| Moongoongoonderup E** | 4ha | *Banksia brownii* |
| SE Ellen Peak S** | 2.5ha | *Lambertia fairallii* |
| SE Ellen Peak W** | 2.5ha | *Banksia brownii, Dryandra anatona* |
| SE Ellen Peak E** | 2.5ha | *Banksia brownii* |
| Mt Hassell * | 4ha | *Banksia brownii* |
| Boulder Hill*** | 1ha | *Andersonia pinaster* |
| Baby Barnett* | 2ha | *Darwinia oxylepis* |
| South Sister*** | 4 ha | *Banksia brownii* |
| Gull Rock* | 1ha | *Isopogon uncinatus* |
| Gull Rock*** | 0.5ha | rate of spread trial |
| Mt Success* | 3.5ha | *Lambertia fairallii, Banksia brownii* |
| Vancouver Peninsula*** | 1ha | *Banksia brownii, Isopogon uncinatus* |
| Hassell National Park*** | 1ha | *Banksia brownii* |
| Waychinnicup A*** | 0.5ha | *Banksia brownii* |
| Waychinnicup B*** | 3ha | *Banksia brownii* |
| Hassell Beach Rd*** | 1ha | *Banksia brownii* |

* new site ** only received one spray in 1998 ***last sprayed in 1996

See Transparency 1 attached: Aerial Phosphite application to *Darwinia oxylepis*, Critically Endangered, Baby Barnett site, Stirling Range National Park, March 1999

***Andersonia axilliflora*** (Critically Endangered):
Monitoring quadrats were established on a new section of Moongoongoonderup west (Eastern Stirling Range) which was included in the 1999 Phosphite program. Unfortunately control plots established to assess the effectiveness of the reduced 12kg $ha^{-1}$ application rate were also sprayed as bad weather had forced staff to evacuate the mountain before the spray.

Monitoring plots established for the 1998 spray (sites which did not receive a second application in 1998 due to weather conditions) were all reassessed to re-establish baseline data. In addition new plots were established for *Dryandra anatona*, SE Ellen Peak.

The results of phosphite monitoring to date suggest that species survival has been enhanced, particularly in areas of slow growing vegetation such as occurs in the Eastern Stirling Range Montane Community. At two years post spray percentage survival of *Phytophthora*- sensitive species in uniformly infested vegetation sprayed at 24 kg $ha^{-1}$ was 60% compared with 30% for unsprayed individuals in control plots (Barrett 1999). In areas of faster growing vegetation the chemical appeared to be diluting more quickly and the onset of plant death was evident from two years at several sites, particularly those which were more recently burnt. While initially it was hoped that a three yearly application would suffice, it appears from this year's monitoring that a two-yearly application is required. No significant adverse affects of Phosphite on sprayed Threatened Flora populations have been observed to date at the application rate of 24 kg $ha^{-1}$.

## 2. Conduct Further Surveys and Monitoring on species listed in this contract's proposal

Considerable effort was put into survey for new populations and monitoring of known populations of Threatened Flora concentrating on Critically Endangered and Endangered species as well as selected Priority 1 and 2 species (Table 2; Table 3). Where possible local participation in survey was encouraged which proved productive. (see Transparency 2 attached: Survey for *Scaevola macrophylla* Priority 1, with volunteers from the Cape Riche area August 1999). Local Wildflower groups (Albany, Ongerup and Ravensthorpe) also provided considerable assistance with survey. There has been less participation in survey in more remote areas such as the Stirling Range where survey and monitoring is more arduous. For mountainous areas a volunteer program targeting suitably fit and interested people is required.

**Table 2. Results of survey for new populations and monitoring of known populations of Threatened and Priority Flora.**

| Species | Main Threats | Numbers of new populations located | Recommendation | Other management |
|---|---|---|---|---|
| **Critically Endangered** | | | | |
| *Deyeuxia drummondii* | low population numbers/total numbers | 4 + 1 sub-population | Endangered | |
| *Drakea confluens* | low population numbers/total numbers | 1 | Further survey | |
| *Grevillea maxwellii* | low population numbers/total numbers | 3 | Endangered | |
| *Isopogon uncinatus* | *P. cinnamomi* | 1 + 2 new sub-populations | Further survey | All known populations monitored, phosphite application |
| *Orthrosanthus muelleri* | low population numbers, weeds | 4 | Vulnerable | |
| *Persoonia micranthera* | *P. cinnamomi,* low population numbers/total numbers | 3 | Further survey | All known populations monitored Phosphite monitoring plots reassessed; cuttings taken |
| Caladenia bryceana ssp bryceana | low population numbers/total numbers, weeds | Informed re 2 locations to be confirmed | Further survey | Roadside markers installed |
| **Endangered** | | | | |
| *Banksia brownii* | *P. cinnamomi* | 1 | | Phosphite monitoring plots established or reassessed/ phosphite application |
| *Dryandra anatona* | *P. cinnamomi* | 5 sub populations | Critically Endangered due to *P. cinnamomi,* Further survey | Phosphite monitoring plots established or reassessed / phosphite application |
| *Daviesia pseudaphylla* | *P. cinnamomi,* low population numbers/total numbers | 2 + 1 sub population | Critically Endangered due to *P. cinnamomi,* Further survey | |
| *Conostylis misera* | low population numbers/total numbers, weeds | 8 | Vulnerable | Marking of road-side populations |
| *Lambertia fairallii* | *P. cinnamomi* | 2 sub-populations | Further survey | Phosphite monitoring plots reassessed |

| | | | | |
|---|---|---|---|---|
| *Lambertia orbifolia* | *P. cinnamomi*, canker, low population numbers/total numbers | 1 | Further survey, community education | To be listed as CE as a known population outside the Albany District is now considered to be a separate sub-species. |
| *Verticordia pityhrops* | *P. megasperma*, low population numbers/total numbers | Total number of individuals increased | Further survey | |
| *Sphenotoma drummondii* | *P. cinnamomi* | 2 | Vulnerable | |
| *Marianthus villosus* | low population numbers | 1 | | |
| **Vulnerable** | | | | |
| *Adenanthos cunninghamii* | Low total numbers | 2 | Remove from list, ? hybrid | Removal from list recommended. Needs genetic study |
| *Drosera fimbriata* | low population numbers | 2 | | |
| *Pleurophascum occidentale* | low population numbers | 3 | | |
| *Thelymitra psammophila* | low population numbers | 3 | | |
| **Priority 1** | | | | |
| *Acacia trulliformis* | low population numbers/total numbers, salinity | 2 | Declared Rare, Further survey | |
| *Scaevola macrophylla* | Unable to locate known or additional populations | 0 | Further survey | ? short-lived disturbance (fire)opportunist |
| *Trymalium littorale.* | low population numbers | 1, in large numbers | | |
| **Priority 2** | | | | |
| *Nemcia luteifolia* | low population numbers/total numbers | Size of known population increased | Declared Rare, Further survey, | Assess susceptibility to *P. cinnamomi* , ? phosphite application |
| *Boronia clavata* | low population numbers/total numbers | 3, in low numbers | Declared Rare, Further survey, | |
| *Daviesia glossosema* | *P. cinnamomi*, low population numbers/total numbers | 2, in low numbers | Declared Rare, Further survey | phosphite application |
| *Daviesia mesophylla* | *P. cinnamomi*, low population numbers/total numbers | 2, in large numbers | | |
| *Sollya drummondii* | low population numbers | 4, total number of individuals increased | Priority 4 | |

**Table 3 Threatened Flora Populations Monitored***

| Species | Main Threats | Management / comments/recommendations |
|---|---|---|
| **Critically Endangered** | | |
| *Andersonia axilliflora* | *P. cinnamomi* | Phosphite monitoring plots established or reassessed, phosphite application |
| *Leucopogon gnaphalioides* | *P. cinnamomi* | Phosphite application |
| *Darwinia oxylepis* | *P. cinnamomi*, low population numbers, trampling | Phosphite monitoring plots established and reassessed, assessment of visitation by foot and vehicle counters, monitoring of trampling. Management of population 1 needs review. |
| *Dryandra montana* | *P. cinnamomi*, low total numbers | Phosphite monitoring, phosphite application |
| **Endangered** | | |
| *Acacia rhamphophylla* | Only one known population | Population stable |
| *Andersonic pinaster* | *P. cinnamomi* | Phosphite monitoring plots reassessed, phosphite application |
| *Darwinia collina* | *P. cinnamomi*, low population numbers | Phosphite application, total numbers of individuals increased |
| *Darwinia wittwerorum* | *P. cinnamomi* | Phosphite monitoring plots established and reassessed |
| *Daviesia megacalyx* | low total numbers | |
| *Dryandra ionthocarpa* | low population numbers, weeds | More seedlings planted in windbreak, weed spraying program |
| *Villarsia calthifolia* | low total numbers | |
| *Verticordia harveyi* | low population numbers | Markers installed in Stirling Range National Park. In large numbers, populations stable. Removal from list recommended. |
| **Vulnerable** | | |
| *Asplenium obtusatum* | low population numbers/total numbers | |
| *Banksia goodii* | | Roadside markers installed |
| *Caladenia christineae* | | Monitored post-fire, population stable |
| *Chordifex abortivus* | Only one population, fire-sensitive | Population stable |
| *Eremophila denticulata* | | Roadside markers installed, disturbance opportunist |
| *Laxmannia jamesii* | | Numbers increased |
| *Myoporum cordifolium* | | Roadside markers installed, disturbance opportunist, numbers increased |
| *Ricinocarpus tricophorus* | | |
| *Verticordia carinata* | | Monitoring plots established |
| *Xyris sp.* | | Population stable |

* all known populations were not monitored

## 3. Track closure/re-alignment

There have been concerns regarding the potential trampling of *Darwinia oxylepis* (Critically Endangered), Baby Barnett Hill, by visitors. This population is also infected by *P. cinnamomi*. Assessment of foot-counter data shows that approximately 150 people visited the site using an unofficial track from October 1998 to November 1999. There are also concerns regarding access to Red Gum Hill, another *D. oxylepis* population, which is currently disease-free but at risk of infection by *Phytophthora cinnamomi*. These issues have been raised in the Albany District and require further discussion involving all stakeholders.

## 4 Liaison with relevant landowners and managers and community liaison

There has been considerable liaison this year with Main Roads WA regarding the proposed widening of Albany Highway which will affect four populations of *Conostylis misera*. The best possible alignment to minimise these impacts was achieved and survey conducted to determine the number of plants which would be damaged during the operation. The four roadside populations of *C. misera* were fenced to ensure that they are clearly demarcated to protect them from damage by machinery.

There has also been considerable liaison with Agriculture WA regarding Notices of Intent to Clear and the potential occurrence of Threatened flora within these areas. Where there was a likelihood of Threatened flora occurring this was followed up by an on-site survey. There has also been liaison with Land-Care Officers regarding Threatened flora in their catchments and information was made available to assist with the identification of potential new populations.

A presentation on the values of roadside vegetation and roadside marking of rare flora was delivered to the Works Team of the Shire of Jerramungup in July 1999.

There has been considerable liaison with private landowners regarding Threatened flora populations on their property. All requests to survey for rare flora on private property have been well received. Significant time has also been spent responding to public inquiries regarding flora on private property or in their locality.

### Threatened Flora Posters

Posters produced by Western Australia's Threatened Species and Communities Unit (WATSCU) for three Threatened Flora species in the Albany District were distributed to a range of outlets for display including libraries, Shire Offices, local museums, Land-care and Bush-care Offices and local stores. Newspaper articles were put in local newspapers also to advertise the distribution of these posters (attached).

### Leaflet drops

Rare Flora leaflet drops were conducted for five species: *Caladenia bryceana* ssp *bryceana, Grevillea maxwellii, Myoporum cordifolium, Orthrosanthus muelleri* and *Thelymitra psammophila* (attached) targeting private property owners within the distribution of each species.

### Rare flora searches

Three Rare Flora Search Days were advertised through the Western Australia Threatened Species Network on their web-page as well as in local newspapers. These searches aimed to involve the local community in survey for Threatened species. There was a poor response to these advertisements and, if repeated in the future, weekend survey may result in greater participation.

**Orchid Survey**

The WA Native Orchid Study and Conservation Group assisted with survey for the Threatened orchid *Thelymitra psammophila* the weekend of September 25-27. More than 20 members of the group assisted and located two new populations as well as a new population of the Critically Endangered *Orthrosanthus muelleri*. Further assistance from the group for survey for Critically Endangered orchids would be greatly appreciated in the future.

## 5 Installation of Roadside Markers, Weed Spraying and Fencing

### 5.1 Weed Management

*Conostylis misera* (Endangered):

The *Conostylis misera* weeding program conducted in conjunction with the Albany Wildflower Society continued in 1999. This site was reassessed with Coralie Hortin of the Albany Wildflower Society in April 1999. Infestations of Lovegrass (*Eragrostis curvula*) have decreased significantly but further spraying and manual weeding was still considered necessary. This was conducted in May 1999. Species native to the site were planted in rehabilitated areas in July 1999.

*Dryandra ionthocarpa* (Critically Endangered):

A weeding program for the Kamballup population of this species commenced in 1998. A shelterbelt of local Eucalypt species was planted to prevent the ongoing incursion of pasture weeds. On inspection April 1999 only the inner of three tree lines had established successfully and weeds (grasses, mallow, paddy melon) continued to be a problem. These were sprayed with Roundup June 1999 with the assistance of CALM staff and *Eucalyptus* seedlings were covered during the spray. Additional seedlings (*E. tetragona*) were planted in June to replace those which had died. A further spray was conducted in spring 1999 to target annual grasses. On inspection December 1999, annual grasses were continuing to invade up to 30m into the population. Weed spraying will continue to be necessary until the shelterbelt has established.

While other populations of Rare Flora would also benefit from weed management, District resources are insufficient to implement these programs. However as several Weed Action Groups have commenced in the Shires it may be possible to integrate weed management of Rare Flora into community programs.

**5.2 Roadside Markers**

Roadside marking of rare flora continued throughout the year (see Table 1; Table 2). New populations located in spring 1999 will require marking this year (2000).

**5.3 Fencing**

New populations of rare flora located on private property during the year were on fenced remnants with the exception of a new population of *Lambertia orbifolia*, comprised of two sub-populations, and a new population of *Conostylis misera* which will all require fencing. Information has been provided to the property manager regarding the Remnant Vegetation Protection Scheme South Coast Region. Further liaison will be required in 2000.

**6. Presentations**

Two presentations were given at a Phosphite Workshop held at Kings Park Botanical Gardens, Perth, 29/7/99 including a talk on "Monitoring of aerial phosphite applications in the South Coast Region of WA".

A presentation on Mountain Flora of the South Coast region was given at the Friends of the Porongurup Range Wildflower Weekend, October 1999. A similar presentation was given to a meeting of Landcare Officers from the South Coast Region in December 1999.

A presentation on Rare Flora of the Albany District was given at a Wildlife Information Day presented by CALM's South Coast Region and Land for Wildlife, November 1999. The same presentation was given to a local community group in Albany in December.

**7. Recovery Team**

The Albany District Threatened Flora Recovery Team met in January 1999, August 1999 and January 2000. The team is currently comprised of community members from throughout the region, representatives of Wildflower groups, local government representatives, CALM Albany Nature Conservation staff, the WA Threatened Species Unit Scientific Advisor (flora) and the Co-ordinator of the Threatened Flora Seed Centre. At the meetings works programs were reviewed and future actions and works programs prioritised. The meetings also discussed strategies for community education and public liaison, Recovery team membership and future funding.

The minutes of the August 1999 meetings are attached.

**8. Recovery Plans**

There has been input to three Interim Recovery Plans for Threatened Species, (*Andersonia axilliflora, Caladenia bryceana* ssp. *Bryceana* and *Persoonia micranthera*) which were written by the WA Threatened Species and Communities Unit, Dept. of CALM.

The Interim Recovery Plan for the Eastern Stirling Range Montane Heath and Thicket Community, which also comes under the Albany District Threatened Flora Recovery Team, was completed in 1999.

**9. Other**

Assistance has been provided throughout the year to the two Translocation projects (*Dryandra ionthocarpa; Lambertia orbifolia*) being conducted in the District. Assistance has also been provided to the Threatened Flora Seed Centre with seed collection. Cutting taken from *Persoonia micranthera* (Critically Endangered), Isongerup population, in June 1999 were given to the Kings Park Botanical Garden, Perth, and have proven successful.

## CONCLUSIONS

The Phosphite Spray Program continues to be a critical component of Threatened Flora Management in the Albany District due to the ongoing impact of *P. cinnamomi* on some 19 species. This work targets a significant component of the Critically Endangered and Endangered flora in the District. Results of monitoring of Phosphite application suggests that there has been enhanced survival of sprayed populations particularly in areas of slow growth such as the Eastern Stirling Range. On fast growing sites it appears that a two yearly spray application is required.

Further survey for new populations was generally productive, even in the case of Critically Endangered species, highlighting the need for ongoing survey in the Albany District where large areas of remnant vegetation have still been inadequately surveyed for Threatened flora. The high number of Threatened and Priority Taxa means that only selected species can be intensively surveyed at any time.

Survey has resulted in five species being recommended for a change of status from Critically Endangered or Endangered to Endangered or Vulnerable. Two species were recommended for removal from the List. Four Priority species were recommended for addition to the Declared Rare List. With further survey several species ranked Vulnerable may potentially be removed from the Declared Rare List. However, a significant number of Priority 1 and 2 species are still in need of survey, several of these are known from less than five populations and may need to be added to the Declared Rare List.

Community involvement in Rare Flora survey is seen as a critical component of Threatened Flora Management to increase community awareness of i) the high species diversity of the District ii) the large number of Threatened species in the District and iii) the processes which threaten their existence. Community involvement in survey will also help increase the knowledge of the distribution of Rare Flora in the District.

Change of Threat Status is less easily achieved for species threatened by *P. cinnamomi* unless new populations are located in non-infected vegetation. For several Critically Endangered and Endangered species this is very unlikely and management by Phosphite application remains a priority management option.

## References

Barrett, S. (1999). Aerial Applications of Phosphite in the South Coast Region of Western Australia. Unpublished Report to the Threatened species and Communities Unit Biodiversity Group, Environment Australia.

**Appendix 1 Recovery Plans and Interim Recovery Plans co-ordinated by the Albany District Threatened Flora Recovery Team**

Wildlife Program No 20: Declared Rare and poorly Known Flora of the Albany District, Department of Conservation & land Management WA

Interim Recovery Plans for individual Western Australian Critically Endangered Plants Department of Conservation & Land Management:

IRP No 12: Kamballup Dryandra (*Dryandra ionthocarpa*) 1996-1999
IRP No 13 Stirling Range Dryandra (*Dryandra montana*) 1996-1999
Giant Andersonia (*Andersonia axilliflora*) 1999-2002
Small flowered Snottygobble (*Persoonia micranthera*) 1999-2002
Dwarf Spider Orchid (*Caladenia bryceana* ssp. *bryceana*) 1999-2002
Mountain Paper Heath (*Sphenotoma drummondii*) 1999-2002
South Stirling Iris (*Orthrosanthus muelleri*) 1996-1999 (Draft)
Maxwell's Grevillea (*Grevillea maxwellii*) 1996-1999 (Draft)

Eastern Stirling Range Montane Heath & Thicket Interim Recovery Plan.

The project is also invvolved in the implementation of the National Dieback Threat Abatement Plan through its phosphite program and other management actions such hygiene measures and track closures.

**ALBANY DISTRICT THREATENED FLORA RECOVERY TEAM**

**MINUTES FOR MEETING**
**18th August 1999**

**Present:**

| | |
|---|---|
| Sarah Barrett | Assistant Conservation Officer, CALM, Albany |
| Alan Danks | Leader of Nature Conservation, CALM, Albany |
| Lawrie Anderson | Wildlife Officer, CALM Albany |
| Patti Leighton | Community Representative, Wellstead |
| Mike Richardson | City of Albany |
| Florence King | Wildflower Society, Albany |
| Sue Oborn | Community Representative, Ongerup |
| Andrew Brown | Scientific Advisor (Flora), WATSCU, Perth |
| Barbara Miller | Community Representative, Bremer Bay |
| John Watson | Regional Manager, CALM Albany |
| Judy Wheeler | Scientist, CALM Science, Albany |

**Apologies:**

| | |
|---|---|
| Graeme Landsowne | Environment Australia Representative, Canberra |
| Merle Bennett | Community Representative, Ravensthorpe/Hopetoun |
| Linda Strahan | Community Representative, Ongerup |

## 1. ACCEPTANCE OF MINUTES FROM 21/1/99 MEETING

The minutes for the 21/1/99 Albany District Threatened Flora Recovery Team meeting had been circulated previously. The minutes were accepted as a true and accurate record of the meeting.

## 2. ADOPTION OF AGENDA

Sarah Barrett distributed the new agenda and asked those present whether any additional items were required.
Issues forwarded were:
Threatened species ranking and Critically Endangered species funding by Andrew Brown.
Threatened Species Day / Month (Threatened Species Network) by Sarah Barrett
Composition of Recovery Team by Sarah Barrett
Use of media to publicise Threatened Flora issues by Patti Leighton
City / Shire involvement in phosphite application by Lawrie Anderson
The meeting agenda was approved accordingly.

## 3. BUSINESS ARISING FROM LAST MEETINGS MINUTES

The members were provided with a summary sheet of actions arising from the last meeting. Each action was reported on:

3.1 **Redistribute C*aladenia bryceana* leaflet.**
A repeat leaflet drop was conducted the week commencing 16/8/99

3.2 **Redistribute *Myoporum cordifolium* leaflet. arrange field visit to a population with Barbara Miller.**
A repeat leaflet drop was conducted in the Jerramungup area the week commencing 16/8/99
The Marra Bridge population of ***Myoporum cordifolium*** was visited with Barbara Miller 28/6/99.

3.3 **Contact Colin Yates, Ecologist, regarding the design and implementation of disturbance trials for *Myoporum cordifolium***

Colin Yates was contacted in May 1999, he advised that before implementing any form of disturbance there was a need to do some basic research on the population biology of the species, for example the soil seed store could be assessed. He planned to contact the Albany District re visiting a *M. cordifolium* site to assist in designing a study when in the Albany District next.

ACTION 1: ARRANGE FIELD TRIP WITH COLIN YATES TO A ***Myoporum cordifolium*** SITE TO DESIGN STUDY

3.4 **Redistribute *Orthrosanthus muelleri* leaflet.**
This leaflet is to be redistributed closer to its flowering time in October

ACTION 2: REDISTRIBUTE ***Orthrosanthus muelleri*** LEAFLET

3.5 **Establish monitoring plots to assess the population dynamics of D*arwinia wittwerorum* seedlings at Talyuberlup.**
Monitoring plots were established at Talyuberlup in March 1999 to assess the population dynamics of seedlings which are densely distributed as a result of post fire recruitment (burnt 1996/97). Four plots were established in *Phytophthora cinnamomi*-infested vegetation and four in *P. cinnamomi* free vegetation. The plots are to be monitored at six monthly intervals to assess natural decline due to thinning of seedlings and decline due to *P. cinnamomi.*

ACTION 3. MONITOR PLOTS D***arwinia wittwerorum*** AT TALYUBERLUP NOVEMBER 1999

**3.6 Survey *Daviesia pseudaphylla* for population counts in spring 1999.**
Initial survey was conducted on this species in May 1999 as access to the area is usually not feasible during its flowering period in August / September. A small new population of four plants was located on Ellen Track, south of Bluff Knoll. The species continues to be highly threatened by *P. cinnamomi.* Further survey is planned for spring as soon as access is feasible.

ACTION 4: SURVEY *DAVIESIA PSEUDAPHYLLA* FOR POPULATION COUNTS IN SPRING 1999.

**3.7 Downgrade *Adenanthos dobagii* from Critically Endangered to Vulnerable at the TSSC**

Andrew Brown advised that he has recommended that this species' status be changed to 'Vulnerable' based on the survey work of Ellen Hickman in 1998.

**3.8 Contact Gnowangerup, Jerramungup and Ravensthorpe shires regarding roadside markings presentation.**

A presentation on roadside marking of rare flora and the values of roadside vegetation was given to the Shire of Jerramungup in July 1999. There was good attendance and interest at the meeting, afterwards three populations of rare flora were marked with the Shire Engineer and his Works Team.

A similar presentation has been offered to the Ravensthorpe and Gnowangerup Shires however their response was less enthusiastic.

A presentation had been planned for the City of Albany Sept 3rd.

As Cranbrook Shire does not have rare flora on Road Reserve at present, they have not been contacted to date.

**3.9 Use City of Albany Plotter to produce A3 size roadside markers posters**

As only a limited number of posters were required this was not pursued and a colour photocopier was used.

**3.10 Establish monitoring plots at the Baby Barnett population of *Darwinia oxylepis* to assess species decline due to trampling by visitors.**

Monitoring plots were established to monitor the effectiveness of phosphite and species decline due to trampling by tourists at the Baby Barnett site in March 1999.

ACTION 5 MONITOR *Darwinia oxylepis* PLOTS IN DECEMBER 1999 TO ASSESS IMPACT OF VISITORS DURING THE WILDFLOWER SEASON, EVALUATE TRACK COUNTER DATA TO ASSESS TRENDS IN VISITATION.

**3.11 Provide photograph of *Boronia clavata* to Barbara Miller and Patti Leighton. Survey for new populations with the assistance of Barbara Miller in spring 1999**

Photographs of this species, which is currently known from 2-3 individuals only, were provided to Barbara Miller and Patti Leighton, and also to Sheila Hobley a wildflower enthusiast from Qualup. Lawrie Anderson noted that this species is grown commercially in the Eastern States. Judy Wheeler suggested contacting Paul Wilson, taxonomic expert for *Boronia*, who may be interested in assisting with survey.

Survey for this species is planned for October 1999, Barbara Miller to be contacted.

ACTION 6: SURVEY FOR *Boronia clavata* IN THE BREMER AND GAIRDNER RIVER AREAS OCTOBER 1999, CONTACT BARBARA MILLER AND PAUL WILSON RE ASSISTING WITH SURVEY.

**3.12 Contact Coralie Hortin re the participation of Albany Branch of the Wildflower Society assisting in survey for *Boronia clavata*.**
It was considered that the area was too far from Albany for Albany Wildflower Society participation. It is possible that the society may assist with another survey in spring closer to Albany. The Society were thanked for their assistance with survey for *Conostylis misera* on a Society field day at South Stirling Nature Reserve where a sizeable new population was located.

**3.13 Survey all known populations of *Thelymitra psammophila* in spring 1999. Contact the WANOSCG regarding their assistance with survey for new populations in spring 1999**
The WA Native Orchid Study Group was contacted re assistance with survey and the group have planned a field trip 25-27th September. The survey will be based at Ongerup. Survey of all known populations will commence late September.

ACTION 7 SURVEY FOR NEW POPULATIONS *Thelymitra psammophila* WITH THE ASSISTANCE OF THE WANOSCG Sept 25-27. Survey all known populations.

**3.14 Assess populations of and threats to *Verticordia carinata* and recommend change in status if appropriate**
The two known populations were surveyed with Andrew Brown March 1999. The small population, Mt James Track, was not located however the North Isongerup population was looking very healthy and total numbers had increased considerably.
Monitoring quadrats were established to see if *P. cinnamomi* is having any indirect effect on *Verticordia carinata* as the jarrah overstorey declines. No change in status from 'vulnerable' was recommended

ACTION 8 MONITOR ***Verticordia carinata*** QUADRATS, NORTH ISONGERUP, ANNUALIY (MARCH 1999) WHEN IN FLOWER.

**3.15 Contact Ruth Moir re relocating a new population of *Scaevola macrophylla* found at Cape Riche in spring 1999**
A field trip to relocate this population has been planned for 31/8/99. The known populations at Cape Riche were not located during survey July 1999.

ACTION 9 RELOCATE *Scaevola macrophylla* AT GROPER BLUFF 31/8/99

**3.16 Produce and distribute *Thelymitra psammophila* leaflet, contact Nadine Brown regarding becoming community representative**
A leaflet was designed and produced July 1999, Nadine Brown agreed to be a community contact, a leaflet drop was conducted the week commencing 16/8/99.

**3.17 Submit final draft of Eastern Stirling Range IRP (Interim Recovery Plan) to John Watson, Regional Manager for approval**
The final draft of the Eastern Stirling Range IRP was approved by John Watson, Regional Manager July 1999. A brief description of the Eastern Stirling Montane

Community was given to the group by Sarah Barrett. The IRP was attached with the last minutes.

**3.18 Contact John Watson regarding the establishment of an action group to implement the plan**

The concept of establishing an action group to implement specific action items in the plan was approved by John Watson.

**3.19 Convene a meeting to establish an action group for the Eastern Stirling Range IRP**

ACTION 10 CONVENE ACTION GROUP MEETING FOR EASTERN STIRLING RANGE MONTANE COMMUNITY INTERIM RECOVERY PLAN SPRING 1999.

**3.20 Team to review threatened species list and rank.**

The following changes in status for Threatened species have been recommended by S. Barrett:

*Conostylis misera*: based on the location of seven new populations in 1999, change from Endangered to Vulnerable

*Adenanthos cunninghamii*: delete from list as probably hybrid. Lawrie Anderson suggested that genetic work be conducted to clarify this.

*Dryandra anatona*: change from Endangered to Critically Endangered due to threat from *P. cinnamomi*

*Daviesia pseudaphylla* change from Endangered to Critically Endangered due to threat from *P. cinnamomi*

*Verticordia harveyi*: delete from list due to abundance however total numbers require clarification as it occurs with *V. sieberi* which is very similar.

In addition the following species were nominated for addition to the list:

*Nemcia luteifolia*, known from one small population on Mt Trio, Stirling Range

*Acacia trulliformis*, known from two populations near Ongerup

*Daviesia glossosema*, known from two populations south of Bluff Knoll threatened by *P. cinnamomi*.

The team was advised that if they felt a particular species was either more rare or more abundant than considered and a change of status was appropriate, population and distribution information could be accessed through Sarah Barrett to assist them. For example for the Wellstead *Acacia* survey Florabase records of Priority *Acacia*s could be provided. Additional information may be obtained through Wildlife Branch in Perth.

The *Acacia* survey was discussed further, it was suggested that Bruce Maslin may be able to assist by providing photos or sketches. Andrew Brown informed the group that the program "Max" for writing herbarium labels and databasing specimen details could be downloaded through the CALM Web site Naturebase.

ACTION 11 ASSESS PERCENTAGE OF *Verticordia sieberi* in *Verticordia harveyi* POPULATIONS MARCH 2000 WHEN FLOWERING, EXAMINATION OF STAMINODES REQUIRED

ACTION 12 CONTACT DAVE COATES RE INVESTIGATION OF THE GENETIC STATUS OF *Adenanthos cunninghamii* TO DETERMINE WHETHER IT IS A HYBRID.

## 4. OTHER WORK SINCE LAST MEETING

### 4.1 Phosphite program

21 sites (50 ha in total) were sprayed in 1999 (see Appendix 2), 13 of these were in the Stirling Range National Park.. New monitoring plots were established for *Dryandra anatona* (SE Ellen Peak), *Andersonia axilliflora* (Moongoogoonderup) and B*anksia brownii* (Waychinnicup and Hassell Beach National Park). Due to weather conditions prior to spraying in the Eastern Stirling Range, control quadrats established on Moongoogoonderup for the 12kg /ha application were not covered with plastic. As rain fell after spraying two sites required a second application. Luke Coney described the operational difficulties involved in the Program. A weather station may help resolve some of these problems in the future. The Station is to be installed at Moir Hill near Ellen Peak shortly.

As it is now three years since phosphite application to Threatened Species commenced on an operational basis in the Albany District it was considered a priority to evaluate the effectiveness of the program to date. All sites sprayed from 1996-1997 (application rate **24kg ha$^{-1}$**) were evaluated and monitoring quadrats or rate of spread trials reassessed where present. The data suggests that loss of disease control commences from approximately 20 months to 30 months post-spray and at least a two year spray rotation is required rather than the hoped for 3 year rotation, unless chemical uptake is improved. While good control of disease has been achieved at sites with slow growing vegetation, at sites with fast growing vegetation the chemical may be diluted more quickly. Plant health appeared good at all sites including Isongerup (Eastern Stirling Range) which was accidentally over-sprayed and foliage burnt in 1997. The lower application rate of 12 kg ha$^{-1}$ , adopted for the Eastern Stirling Range sites in 1998, requires careful evaluation as to its effectiveness, annual spraying may be required with this rate if its continued to be used. Control quadrats (covered during spray) need to be maintained when respraying. As species come into flower post fire in the Eastern Stirling Range, comparisons of flowering in sprayed and unsprayed sites may be valuable for Threatened species, to ensure reproduction is not compromised.
Concerns regarding funding of the project were voiced by Andrew Brown as the project relies on funding by NHT. Alan Danks emphasised the need to obtain secure long-term funding for the Threatened Flora officer position and the Phosphite Program.

### 4.2 Survey Work

The following Threatened species were surveyed for:
*Conostylis misera*: 7 new populations, 6 of these were roadside populations.

*Deyeuxia drummondii*: 1 new
*Grevillea maxwellii*: 1 new
*Daviesia pseudaphylla*: 1 new
*Myoporum cordifolium*: new sub-population located by Linda Strahan
*Pleurophascum occidentale*: 1 new
*Dryandra anatona*: new sub-populations
*Banksia brownii*: new sub-population
*Verticordia pityhrops*: population extended
*V. carinata*: population numbers increased
*Adenanthos cunninghamii*: 1 new population
*Sphenotoma drummondii*: 2 new
*Chordifex abortivus*: 0 new
In addition several Priority species were surveyed for including *Trymalium littorale, Daviesia glossosema* and *Acacia trulliformis*.

Mike Richardson from the City commented on the vulnerability of roadside populations. Management options were discussed including translocation of plants and land purchase. It was advised that weed control between rare Flora Markers was possible but a Permit to Take from Wildlife Branch is required. Luke Coney advised Mike that where overhanging vegetation is a traffic hazard this may be selectively pruned without affecting the Rare Flora.

**4.3 Weeding programs:**
The *Conostylis misera* weeding program continued in May 1999, co-ordinated by the Albany Wildflower Society. Weed infestations have been considerably reduced and an additional *Conostylis* clump has emerged. Florence King reported that the Society plans to plant seedlings of species local to the site 21/8/99.

Three rows of shelter belts were planted at the *Dryandra ionthocarpa* (Kamballup Dryandra) population bordering pasture in 1998. On inspection autumn 1999, two of the rows had failed to establish. These were replanted with mallee eucalupyts June 1999 and the area sprayed with Roundup. Additional weed control will be required in spring 1999. The new population of *D. ionthocarpa* located near Narrogin last year was discussed. Andrew Brown reported that it resprouts post-fire whereas the Kamballup Dryandra is a seeder. The importance of clarify the taxonomy of the species was stressed.

ACTION 13: SPRAY WEEDS AROUND SHELTER BELT SEEDLINGS, *Dryandra ionthocarpa*, SPRING 1999

ACTION 14 CONTACT DAVE COATES RE INVESTIGATION OF THE GENETIC STATUS OF *Dryandra ionthocarpa* TO DETERMINE WHETHER THE KAMBALLUP AND NARROGIN VARIANTS ARE THE SAME SPECIES. .

**4.4 Roadside marking of DRF.**
Seven populations of *Conostylis misera* were marked with the assistance of Main Roads WA and the Shire of Plantagenet. Considerable time has been spent surveying three

populations of *Conostylis misera,* which occur within an area of Albany Hwy which Main Roads WA plans to widen, to ascertain exactly how many individuals of this cryptic species may be affected.
Three populations of rare flora were marked in the Shire of Jerramungup. Sue Oborn commented that a population of *Eremophila denticulata* ssp *denticulata* was marked on road verge near Ongerup, no recorded exists for this population in Albany.

ACTION 15 CHECK WITH SHIRES AND CITY THAT ALL KNOWN ROAD VERGE POPULATIONS ARE MARKED, MARK *Eremophila denticulata ssp denticulata* POPULATION IN RAVENSTHORPE SHIRE.

ACTION 16 VERIFY *Eremophila denticulata* POPULATION ON ROAD VERGE NEAR ONGERUP.

**4.5 Critically Endangered Species Posters**
Posters of 3 species (*Grevillea maxwellii, Caladenia bryceana ssp bryceana, Dryandra ionthocarpa*) were supplied by WATSCU (WA Threatened Species & Communities Unit).These were distributed to community contact points such as community halls, local stores for display in autumn 1999, more leaflets are available.

**4.6 Leaflet drops**
An additional leaflet was designed and a drop conducted for *Grevillea maxwellii*, Penny Moir agreed to be the contact person for this drop. Meeting on site with Penny led to a visit to her neighbours property on the Pallinup river where fortuitously a healthy new population of the species was located. To complete the story it turned out that this neighbour is a direct descendant of James Drummond who first collected the species in the area in 1840.

**5. PROPOSED WORKS PROGRAM**

**5.1 Spring survey work:**
Survey in spring is planned for *Boronia clavata, Thelymitra psammophila, Deyeuxia drummondii, Drakea confluens, Scaevola macrophylla, Dryandra anatona, Daviesia pseudaphylla, D. glossosema, Anigozanthus bicolor* ssp. *minor, Asplenium obtusatum* (field trip to Michaelmas Island)and *Nemcia luteifolia.*
In addition it has been requested by Wildlife Branch that during other survey that we survey opportunistically for *Lasiopetalum membranifolium*, last collected in 1867 in the Stirling Range during other surveys in the Park.
Luke Coney suggested that *Nemcia luteifolia* may occur on the hills around Mt Hassell.
Andrew Brown reported that he will be surveying for *Anigozanthus bicolor ssp. minor* October 4-8, Sarah will accompany him for survey in recently burnt areas in the eastern Fitzgerald River, the species flowers post-fire.

ACTION 17 SURVEY FOR *Deyeuxia drummondii, Drakea confluens Dryandra anatona, Daviesia pseudaphylla, D. glossosema, Anigozanthus bicolor* ssp. *minor, Asplenium obtusatum* and *Nemcia luteifolia* IN SPRING 1999

## 6. GENERAL BUSINESS

### 6.1 Interim Recovery Plans

Assistance has been provided with the preparation of Interim Recovery Plans for *Andersonia axilliflora* and *Persoonia micranthera* , in addition the final draft of the Eastern Stirling Range Interim Recovery Plan was completed in June.

Andrew Brown outlined to the meeting the format and content of an Interim Recovery Plan which are completed for Critically Endangered species or communities. IRPs for final editing include those for *Caladenia bryceana* ssp *bryceana, Orthrosanthus muelleri* and *Grevillea maxwellii* . Other IRPs which are being prepared include those for *Deyeuxia drummondii, Drakea confluens, Isopogon uncinatus* and *Leucopogon gnaphalioides*.

### 6.2 Ranking of Threatened Species

Andrew Brown reported that *Lambertia orbifolia* had been split into two species, the Narrikup species was now Critically Endangered. The success of the Translocation project in the Narrikup area was commented on. Alan Danks requested progress reports on the two Translocation Projects ( *L. orbifolia, Dryandra ionthocarpa*) being conducted in the Albany District.

ACTION 18. OBTAIN PROGRESS REPORTS ON TRANSLOCATION PROJECTS FOR *Lambertia orbifolia, Dryandra ionthocarpa.*

### 6.3 Membership of the recovery team

Priscilla Broadbent, Community member from Bremer Bay has resigned from the team. Representatives from Environment Australia are unable to attend due to costs.
The composition of the team was discussed. John Watson suggested that all districts should be covered by representatives. There is currently no member for Cranbrook or Gnowangerup, it was suggested that further Shire representation may be helpful, e.g. Jim Martin from Gnowangerup. Community representatives also suggested that the agenda be scheduled to ensure that items relevant to the community were discussed first, then if necessary members can leave early to attend to other business.

ACTION 19: LOOK FOR SUITABLE REPRESENTATIVE FOR THE RARE FLORA RECOVERY TEAM FROM THE CRANBROOK AND GNOWANGERUP AREAS

ACTION 20 SCHEDULE AGENDA ITEMS TO ENSURE THAT TOPICS RELEVANT TO COMMUNITY MEMBERS ARE DISCUSSED FIRST.

### 6.4 Media coverage of Threatened flora.

Patti Leighton suggested that a feature on Threatened Flora of the Albany District on th eTV program Landline would be a good way of focussing the public's attention on our unique flora and threats to this flora. Other suggestions were a regular feature on local

ABC radio. It was agreed that the phosphite program in the Stirling Range had all the makings of a good story.

John Watson discussed the upcoming "Biodiversity Workshop" to be held in November, by CALM South Coast Region, with keynote speakers highlighting the biodiversity of the South Coast, threats to this biodiversity and the values of remnant bushland.

ACTION 21 CONTACT CORPORATE RELATIONS REGARDING THE PROMOTION OF THREATENED FLORA OF THE ALBANY DISTRICT IN THE MEDIA

**6.5 Threatened Species Day / Month – Threatened Species Network**
September 7th is Threatened Species Day, and the World Wide Fund for Nature and the Threatened Species Network are putting together a calendar of events for September including rare Flora Searches (advertised on a 1800 number, in the West Australian and the TSN newsletter). This year activities have been proposed for rural areas. Several options for Rare Flora searches were discussed including Drummond's grass (*Deyeuxia drummondii*) on Bluff Knoll, *Lambertia orbifolia* at Narrikup and *Caladenia bryceana* ssp *bryceana* at the Pallinup River.

Andrew Brown also commented that funds for surveys using ATCV volunteers is available from the WWF.

ACTION 22. SARAH TO FINALISE DETAILS OF RARE FLORA SEARCHES AND COMMUNICATE THESE TO THREATENED SPECIES NETWORK FOR ADVERTISING

**6.6 City of Albany /Shire involement in the phosphite program**
Lawrie Anderson suggested that the City of Albany or other Shires should be using phosphite for management of Rare Flora on their Reserves where *Phytophthora cinnamomi* is a threat. It was mentioned that Melanie Price, Environmental Planner City of Albany, has expressed interest in phosphite application on Mt Martin.

ACTION 23 LIAISE WITH MIKE RICHARDSON / MELANIE PRICE CITY OF ALBANY RE PHOSPHITE APPLICATION ON CITY RESERVES.

ACTION SUMMARY FROM MEETING 18/8/99

| Action No. | Action Summary | Action Officer | Page ref. |
|---|---|---|---|
| 1 | Arrange field trip with Colin Yates to a ***Myoporum cordifolium*** site to design population biology study | Sarah Barrett | 2 |
| 2 | Redistribute **Orthrosanthus *muelleri*** leaflet | Sarah Barrett | 2 |
| 3 | Monitor plots D***arwinia wittwerorum*** at Talyuberlup November 1999 | Sarah Barrett | 2 |
| 4 | Survey for ***Daviesia pseudaphylla*** in spring 1999. | Sarah Barrett | 3 |
| 5 | Monitor ***Darwinia oxylepis*** plots, Baby Barnett site, in December 1999 to assess impact of visitors during the wildflower season, evaluate track counter data to assess trends in visitation. | Sarah Barrett | 3 |
| 6 | Survey for **Boronia *clavata*** in the Bremer and Gairdner river areas October 1999, contact Barbara Miller and Paul Wilson re assisting with survey. | Sarah Barrett<br>Barbara Miller | 3 |
| 7 | Survey for new populations of ***Thelymitra psammophila*** with the assistance of the WANOSCG Sept 25-27. Survey all known populations. | Sarah Barrett | 4 |
| 8 | Monitor ***Verticordia carinata*** quadrats, north Isongerup, annually (March 1999) when in flower. | Sarah Barrett | 4 |
| 9 | Relocate **Scaevola *macrophylla*** at Groper Bluff 31/8/99 with Ruth Moir | Sarah Barrett<br>Ruth Moir | 4 |
| 10 | Convene action group meeting for Eastern Stirling Range Montane Community IRP spring 1999. | Sarah Barrett | 5 |
| 11 | Assess percentage of ***Verticordia sieberi*** in ***Verticordia harveyi*** populations March 2000 when flowering, examination of staminodes required | Sarah Barrett | 6 |
| 12 | Contact Dave Coates re investigation of the genetic status of ***Adenanthos cunninghamii*** to determine whether it is a hybrid. | Sarah Barrett | 6 |
| 13 | Spray weeds around shelter belt seedlings, **Dryandra *ionthocarpa*** Kamballup, spring 1999 | Sarah Barrett | 7 |
| 14 | Contact Dave coates re investigation of the genetic status of ***Dryandra ionthocarpa*** to determine whether the Kamballup and Narrogin variants are the same species. . | Sarah Barrett | 7 |
| 15 | Check with Shires and City that all known road | Sarah Barrett | 8 |

| | | | |
|---|---|---|---|
| | verge populations of DRF are marked, mark ***Eremophila denticulata ssp denticulata*** population in th e Ravensthorpe Shire. | | |
| 16 | Verify ***Eremophila denticulata ssp denticulata*** population on road verge near Ongerup. | Sarah Barrett<br>Sue Oborn<br>Linda Strahan | 8 |
| 17 | Survey for ***Deyeuxia drummondii, Drakea confluens Dryandra anatona, Daviesia pseudaphylla, D.g lossosema, Anigozanthus bicolor* ssp. *minor, Asplenium obtusatum*** and ***Nemcia luteifolia*** in spring 1999 | Sarah Barrett<br>Andrew Brown<br>(*Anigozanthus bicolor* ssp. *minor)* | 8 |
| 18 | . Obtain progress reports on translocation projects for ***Lambertia orbifolia, Dryandra ionthocarpa*** | Sarah Barrett | 9 |
| 19 | Look for suitable representative for the rare flora recovery team from the Cranbrook and Gnowangerup areas | Sarah Barrett | 9 |
| 20 | Schedule agenda items to ensure that topics relevant to community members are discussed first. | Sarah Barrett | 9 |
| 21 | Contact Corporate Relations CA:LM regarding the promotion of Threatened Flora of the Albany District in the media | Sarah Barrett | 10 |
| 22 | Finalise details of Rare Flora searches and communicate these to threatened species network for advertising | Sarah Barrett | 10 |
| 23 | Liaise with Mike Richardson / Melanie Price City of Albany re phosphite application on City reserves. | Sarah Barrett | 10 |

APPENDIX 1 ACTION SUMMARY (from 21/1/99)

| ACTION NO. | ACTION SUMMARY | ACTION OFFICER | COMPLETION DATE |
|---|---|---|---|
| 1 | Redistribute *Caladenia bryceana* leaflet. | Sarah Barrett | Aug 99 |
| 2 | Redistribute *Myoporum cordifolium* leaflet. arrange field visit to a population with Barbara Miller. | Sarah Barrett | Aug 99 |
| 3 | Contact Colin Yates, Ecologist, regarding the design and implementation of disturbance trials for *Myoporum cordifolium* | Sarah Barrett | May 99 |
| 4 | Redistribute *Orthrosanthus muelleri* leaflet. | Sarah Barrett | Oct 99 |
| 5 | Establish monitoring plots to assess the population dynamics of *Darwinia wittwerorum* seedlings at Talyuberlup. | Sarah Barrett | March 99 |
| 6 | Survey *Daviesia pseudaphylla* for population counts in spring 1999. | Sarah Barrett | May 99/ Oct 99 |
| 7 | Downgrade *Adenanthos dobagii* from critically endangered to vulnerable at the TSSC | Andrew Brown | Aug 99 |
| 8 | Contact Cranbrook, Gnowangerup, Jerramungup and Ravensthorpe shires regarding roadside markings presentation. | Sarah Barrett | Aug 99 |
| 9 | Use City of Albany Plotter to produce A3 size roadside markers posters | Sarah Barrett | N/A |
| 10 | Establish monitoring plots to assess damage to the Baby Barnett population of *Darwinia oxylepis* resulting from visitor damage. | Sarah Barrett | March 99 |
| 11 | Provide photograph of *Boronia clavata* to Barbara Miller and Patti Leighton.<br>Survey for new populations with the assistance of Barbara Miller in spring 1999 | Sarah Barrett | May 99/ Oct 99 |
| 12 | Contact Coralie Hortin re the participation of Albany Branch of the Wildflower Society assisting in survey for *Boronia clavata*. | Sarah Barrett | May 99 |
| 13 | Survey all known populations of *Thelymitra psammophila* in spring 1999. Contact the WANOSCG regarding their assistance with survey for new populations in spring 1999 | Sarah Barrett | March 99/ Sept 99 |
| 14 | Produce and distribute *Thelymitra psammophila* leaflet, contact Nadine Brown regarding becoming community representative | Sarah Barrett | June 99 |
| 15 | Assess populations of and threats to *Verticordia carinata* and recommend change in status if appropriate. | Sarah Barrett | March 99 |
| 16 | Contact Ruth Moir re relocating a new population of *Scaevola macrophylla* found at Cape Riche in spring 1999 | Sarah Barrett | Aug 99 |
| 17 | Submit final draft of Eastern Stirling Range IRP to John Watson, Regional Manager for approval | Sarah Barrett | June 99 |
| 18 | Contact John Watson regarding the establishment of an action group to implement the plan | Sarah Barrett | June 99 |
| 19 | Convene a meeting to establish an action group for the Eastern Stirling Range IRP | Sarah Barrett | Oct 99 |
| 20 | Team to review threatened species list and rank. | All | July 99 |

**APPENDIX 2 PHOSPHITE SPRAY TARGETS AUTUMN 1999**

Targets for the Autumn 1999 Phosphite spray program were:

| Location | Area | Declared Rare Flora species treated by Phosphite |
|---|---|---|
| EASTERN STIRILING RANGE MONTANE COMMUNITY | | |
| Ellen Peak | 1ha | *Andersonia axilliflora, Sphenotoma drummondii, Leucopogon gnaphalioides* |
| Ellen/Pyungoorup Saddle | 1ha | *Andersonia axilliflora, Sphenotoma drummondii, Leucopogon gnaphalioides* |
| Pyungoorup | 3.5ha | *Andersonia axilliflora, Dryandra montana, Sphenotoma drummondii, Leucopogon gnaphalioides* |
| Bakers Knob | 3ha | *Andersonia axilliflora, Darwinia collina, Sphenotoma drummondii* |
| Moongoongoonderup W | 8ha | *Andersonia axilliflora, Banksia brownii, Darwinia squarrosa* |
| Moongoongoonderup E | 4ha | *Banksia brownii* |
| SE Ellen Peak S | 2.5ha | *Lambertia fairallii* |
| SE Ellen Peak W | 2.5ha | *Banksia brownii, Dryandra anatona* |
| SE Ellen Peak E | 2.5ha | *Banksia brownii* |
| Mt Success | 3.5ha | *Lambertia fairallii, Banksia brownii* |
| STIRLING RANGE NATIONAL PARK | | |
| Mt Hassell | 4ha | *Banksia brownii* |
| Baby Barnett | 2ha | *Darwinia oxylepis* |
| South Sister | 4 ha | *Banksia brownii* |
| Gull Rock | 1ha | *Isopogon uncinatus* |
| Gull Rock | 0.5ha | rate of spread trial |
| Boulder Hill | 1ha | *Andersonia pinaster* |
| Vancouver Peninsula | 1ha | *Banksia brownii, Isopogon uncinatus* |
| Hassell National Park | 1ha | *Banksia brownii* |
| Waychinnicup A | 0.5ha | *Banksia brownii* |
| Waychinnicup B | 3ha | *Banksia brownii* |
| Hassell Beach Rd | 1ha | *Banksia brownii* |