

**Geraldton District Threatened Flora & Ecological Communities
Recovery Team**

Project No. 446

Annual Report

2004

by

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for the Geraldton District Threatened Flora and Threatened Ecological Communities Recovery Team

Summary

This report covers progress made in the implementation of the Threatened Flora Management Plan for CALM's Geraldton District, Project Number 446, and Interim Recovery Plans for Declared Rare Flora (DRF) taxa and Threatened Ecological Communities, from January 2004 to January 2005.

There has been one meeting of the Recovery Team during the year and members have continued to contribute to survey work and recovery actions and in providing advice to the District Conservation Officer regarding flora conservation matters in their local areas.

A large amount of productive fieldwork has again been undertaken during the year. One species that was previously not known from any living plants (*Beyeria lepidopetala*) was relocated and two secure populations were surveyed. 21 new populations and sub populations of 10 DRF taxa were surveyed (*Beyeria lepidopetala* 2 pops, *Caladenia bryceana* subsp. *craecens* 2 pops, *C elegans* 1 pop, *C hofmannii* subsp. *hofmannii* 2 subpops, *Eremophila rostrata* 1 subpop, *Eremophila viscida* 3 pops, *Eucalyptus beardiana* 5 pops, *Eucalyptus blaxellii* 2 pops, *Grevillea bracteosa* 1 pop, *Wurmbea tubulosa* 2 subpops.) and more extensive survey at some known population has found populations to be much larger than previously recorded (*Acacia imitans*, *Conostylis deilsii* subsp. *terres*, *Eucalyptus beardiana*, *Hybanthus cymulosus*, *Leucopogon marginatus*, *Stachystemon nematophorus*.) This has resulted in several DRF having improved conservation status and information has been gained on distribution and habitat requirements.

Taxonomic work has been undertaken for several DRF which are recorded in disjunct populations in different habitat. This has included genetic work for *Eremophila rostrata* and *Eremophila microtheca* and morphological determination for *Stylidium coroniforme* and *Hypocalymma longifolium*; and for each determination is likely to separate them into different taxa.

Promotion of Threatened Flora conservation within the community has continued, including local newspaper articles, poster sheets and community group involvement in implementing recovery actions.

Implementation of Wildlife Management Program No. 26 Declared Rare and Poorly Known Flora in the Geraldton District has continued and Interim Recovery Plans for the following have been produced and are being implemented: *Caladenia elegans* 2003 - 2008, *Pterostylis* sp Northampton 2003 – 2008, *Conostylis micrantha* 2004 – 2009, *C deilsii* subsp *terres* 2004 – 2009, *Drummondita ericoides* 2003 – 2008, *Eremophila rostrata* 2002 – 2007, *Eremophila viscida* 2003 – 2008, *Gyrostemon reticulatus* 2002 – 2007, *Grevillea phanerophlebia* 2001 - 2004 and *Hypocalymma longifolium* 2001 - 2004, *Eucalyptus crucis* subsp. *praecipua* 2004 – 2009, *Stylidium coroniforme* 2003 – 2008, *Verticordia spicata* subsp *squamosa* 2004 – 2009, Threatened Ecological Communities - Plant Assemblages of the Moonagin System 2001 - 2006, Plant Assemblages of the Billeranga System 2001 - 2006.

1. Recovery Team

1.1 The recovery team met once during the year. The next meeting is scheduled for 4th March 2004.

Official Members

Don Bellairs	CALM Volunteer, Wildflower Society, Kalbarri
Ian Hamilton	Main Roads WA, Roadside Management Officer, Geraldton Division
Meg Officer	Woolgorong Station, Murchison Field Herbarium
Robin Westlake	CALM Volunteer, Wildflower Society, Woorree Nursery, Geraldton
Pat Fitzgerald	Murrum Station Mt Magnet
Estelle Leyland	Mullewa Wildflower Society
Graham Wilks	Mullewa Shire CEO

Several of these members (Meg Officer, Pat Fitzgerald, Estelle Leyland and Graham Wilks) have resigned as members for various reason, although have not been officially removed from the membership list.

Technical Advisers and Non-Official Members

Anthony Desmond	(Chair) CALM Regional Leader Nature Conservation
Sue Patrick	(Chief Investigator), CALM Science, WA Herbarium
Val English	CALM, WA Threatened Species and Communities Unit
Rosemarie Rees	CALM, WA Threatened Species and Communities Unit
Leonie Monks	CALM, WA Herbarium
Andrew Crawford	CALM, Threatened Flora Seed Centre
Alanna Chant	CALM, Conservation Officer (Flora), Geraldton District
Robyn Nicholas	Morowa Herbarium Group, local TEC representative
Jenna Brooker	Geraldton Herbarium Group, Greenough Flats TEC
Anne Car	Dongara Herbarium Group
Robyn Soulier	Mingenew Herbarium Mingenew LCDC
Joesephine Docherty	Wildflower Society, Mullewa

Declared Rare Flora

Acacia imitans (CR)

Implementation of management requirements for this species has been as follows:

- The Geraldton District has continued to maintain liaison with the land managers, particularly in relation to feral goat control. The care-taker at Mt Gibson Station is familiar with the plant and is actively looking for new populations.
- Fencing a large section of the Ninghan pastoral lease, which includes only known locations for this species, was scheduled to begin in late 2004.
- Survey in the Mt Singleton Range was carried out during October 2004 and all populations were monitored. It was found that the impact of feral goat grazing on populations was at a reduced level, with plants having some new growth. Many new plants were recognizable with 500+ being recorded (100+ had been recorded in 2003).
- Seed was collected for storage at the Threatened Flora Seed Centre.

Acacia unguicula (CR)

Implementation of management requirements for this species has been as follows:

- The Recovery Team has continued to maintain liaison with the land managers, particularly in relation to feral goat control.
- Fencing of a large section of the Ninghan pastoral lease, which includes this species, was scheduled to begin in late 2004.
- Survey in the Mt Singleton range was carried out during October 2004 and populations 1, 3, 4 and 5 were monitored. The impact of feral goat grazing on populations was again found to be reduced.
- Seed was collected for storage at the Threatened Flora Seed Centre.

Beyeria lepidopetala (CR)

This species was relocated during a Wildflower Society survey of Eurardy Station, and two populations have now been surveyed. Recovery actions have been as follows:

- Searching for this species has continued opportunistically, in conjunction with other surveys in the Kalbarri area. Further survey at Eurardy is intended for 2005.
- An Interim Recovery Plan will be prepared during 2004 and other necessary recovery actions will be determined as part of this process.

Caladenia barbarella (EN)

Implementation of management requirements for this taxon, has been as follows:

- Several populations were monitored during 2004.
- The Recovery Team has continued to maintain liaison with land managers during 2004. Discussions with Eurardy Station pastoralists indicated that although they undertake rabbit control (baiting and shooting), rabbits are a continuing threat to orchids on this Station.
- Populations have been protected by fire and fire breaks and prescribed burning has been carried out in Kalbarri National Park.

Caladenia bryceana subsp. *cracens* ms (EN)

Implementation of management requirements for this taxon during 2004 has been as follows:

- Several populations monitored during 2004. Survey by volunteers at Nerren Nerren Station was successful in locating several new populations in good quality vegetation. Attempts to relocate populations at Horrocks and Murchison House will be scheduled for 2005.
- Liaison has been maintained with relevant land managers.
- Populations have been protected by fire by maintenance of fire breaks and prescribed burning programs, where they occur in Kalbarri National Park.

***Caladenia elegans* ms (CR)**

Recovery actions implemented for this species during 2004 have included:

- A BGPA botanist collected material and the species has been successfully propagated in the Kings Park nursery. A translocation proposal is now in progress in cooperation with BGPA.
- Further survey was conducted in the Northampton area and resulted in a new population being surveyed.
- District staff have continued to liaise with property owners, the Chapman Valley Shire and the Northampton Shire regarding management of this species, particularly in regard to a proposal to widen the Port Gregory Road and management of a populations on Shire Reserves.
- All populations of this species were monitored during August 2004.
- The activity of feral pigs is being monitored and control measures are being undertaken by several property owners. A feral pig proof fence is planned for construction at the translocation site.

***Caladenia hoffmanii* subsp. *hoffmanii* ms (EN)**

Management requirements have been implemented as follows:

- Most populations were monitored during 2004. Feral pigs had been impacting on the species habitat at Moresby, Oakajee and Oakabella Nature Reserves and the Geraldton District has carried out pig control in the area. More extensive survey of the Moresby and Oakajee Reserves was conducted and new sub populations were located at Oakajee.
- Liaison with the Shire of Northampton and the Shire of Chapman Valley in relation to this taxon has continued.
- A BGPA botanist collected material from this taxon again during 2004, for the purpose of research into propagation.
- The species has not been impacted by fire and fire breaks have been maintained in the reserves where this orchid occurs.

***Caladenia wanosa* (EN)**

Management requirements have been implemented as follows:

- Several populations were monitored during 2004. Feral pigs are continuing to impact on the species habitat in Kalbarri.
- Liaison has been maintained and Pastoralist at Eurardy assisted with monitoring populations.
- Populations have not been impacted by fire, and fire breaks and prescribed burning has been carried out in Kalbarri National Park.

***Chorizema humile* (CR)**

This species has not yet been relocated in the Geraldton District therefore recovery actions have been limited:

- Opportunistic survey was carried out during July survey for *Wurmbea tubulosa* in the vicinity of Strawberry.

***Conostylis dielsii* subsp. *terres* (VU)**

Management requirements have been implemented as follows:

- All populations were monitored during 2004. Further survey was conducted in Burma Road Nature Reserve and the taxon was surveyed to be more extensive, particularly at populations 3 (250+ plants) and 6 (1000+ plants).
- The level of rabbit activity has been monitored and it is likely that baiting will be required at some populations in the near future.
- A wildfire burnt approximately 80% of Burma Road Nature Reserve during the 04/05 summer, which included several populations of this taxon. It is thought that the majority of the larger populations (3 and 6) were not burnt. The District Fire Coordinator had been provided with a map detailing DRF locations within the reserve and fire breaks have been regularly maintained, however it was not possible to protect the DRF due to wildfire conditions. Post fire monitoring of the recovery will be a high priority for 2005.

- An Interim Recovery Plan was prepared for this taxon in 2004, however some recovery actions will require modification due to populations being burnt, for example, monitoring and control of weed invasion will need to be carried out during winter 2005.

***Conostylis micrantha* (VU)**

An Interim Recovery Plan (2004 – 2009) was prepared for this species during 2004. Recovery actions implemented to date have included:

- All significant populations were monitored during 2004. The level of rabbit activity is increasing and is likely to require control measures in the near future.
- A wildfire burnt approximately 80% of Burma Road Nature Reserve during the 04/05 summer. Although it is expected that population 7 was not burnt. The District Fire Coordinator had been provided with a map detailing DRF locations within the reserve and fire breaks have been regularly maintained, however it was not possible to protect the DRF due to wildfire conditions.
- An Interim Recovery Plan was prepared for this taxon in 2004, however some recovery actions will require modification due to populations being burnt.

***Darwinia masonii* (EN)**

Management requirements, which have been implemented, include:

- The portions of the population which occur on the western ridge and also the far eastern ridge of the Mt Gibson range were monitored during 2004 and impacts of mining exploration were observed.
- Survey has also been conducted by consultants for the Mt Gibson mining company and detailed reports have been provided, which indicate the species is in much larger numbers than previously recorded. A peer review of this data was undertaken by Sue Patrick, which included field inspections in order to determine the data accuracy. CALMs data will therefore, not be amended to include this new information until its accuracy is verified.
- Liaison has been maintained particularly in relation to the issue of mine exploration disturbance, as a scoping document for the proposal has now been prepared. At this stage CALM has provided comment to this document, which the recovery team contributed to. Mining is likely to have a significant impact on the species and its habitat.
- Wildfire did not threaten the species during the recent fire season. It will be necessary for adequate fire management measures to be in place due to the likelihood that a mining operation may increase the risk of wildfire.
- Survey of nearby suitable habitat was conducted by consultants in 2003 and 2004 however no new populations have been located.
- Seed was collected for storage at the Threatened Flora Seed Centre.

***Daviesia speciosa* (EN)**

Management Requirements have been implemented as follows:

- The Recovery Team has continued to liaise with landowners and Shires.
- Populations 3, 4, 5 and 7 in the Geraldton District were monitored during 2004 and their condition was found to be stable.
- Populations have been protected from road works and gravel extraction and markers are in place at all known roadside populations.
- Further survey was conducted of road verges to the south and west of the Geraldton populations, however no new populations were found.

***Diuris drummondii?* (VU)**

- This population is a significant range extension for the species, which was previously known to occur as far north as Perth.
- A wildfire burnt through the Yerina Spring (location of this population) during the 03/04 summer. The Yerina Springs population site was monitored during this orchid's next flowering period (November 04), however no plants were located. It will be necessary to re-find the population and undertake a full survey of the area, then determine recovery actions required to ensure its protection.

***Drakaea concolor* ms (EN)**

Management requirements have been implemented as follows:

- Several populations were monitored during 2004. Feral pigs continue to be a threat in Kalbarri National Park.
- Rehabilitation of a gravel pit adjoining a population in Kalbarri National Park has been undertaken.
- No populations have been impacted by fire and fire management measures are in place for the Kalbarri National Park, in which most populations occur.

***Drummondita ericoides* (EN)**

An Interim Recovery Plan has been prepared for this species. Management Requirements have been implemented as follows:

- All populations were monitored during 2004.
- Further survey was conducted in suitable habitat within the Moresby Conservation Park and a newly purchased reserve to the east.
- Liaison with relevant landowners has been maintained.
- Weed control and rehabilitation works have continued at the Moresby Reserve as part of the Crown Reserves project.
- No populations have been impacted by fire, and fire breaks at Moresby have been maintained.

***Eremophila micrantha* (P4)**

Implementation of recovery actions has been as follows:

- All populations were monitored during 2004.
- Material was collected in order to undertake genetic research to determine if the disjunct populations at Kalbarri and Eneaba are the same taxa. This research is currently in progress. Consideration is being given to re-listing this as DRF.

***Eremophila nivea* (CR)**

Implementation of recovery actions has been as follows:

- The Geraldton District population was monitored during 2004 and 17 new seedlings were recorded on the road verge which had been graded several years ago.
- Surveys were undertaken for this species on private property and road reserves in the Morowa and Perenjori Shires, however no new populations were located.
- Attempts to propagate plants for translocation planting continued, without much success.
- Trials to gain information on recruitment requirements for this species were undertaken and monitored. These involved direct seeding trials at a translocation site and trials to induce recruitment at an existing population.

***Eremophila rostrata* ms (CR)**

An Interim Recovery Plan (2003 – 2008) has been prepared for this species. The criteria for success of the IRP (i.e. the number of individuals within populations and/or the number of populations have increased) have been achieved in 2004, due to extra plants being located near the Cue populations. The taxon is still very low in numbers and further recovery actions are intended. Recovery actions during 2004 have been as follows:

- Survey to the west of Cue population (pop 1) resulted in extra plants and a sub population being located. Remnant vegetation on private property near the Perenjori populations has been surveyed and no new populations have been located.
- All populations were monitored during 2004.
- A poster sheet has been prepared and printed for this species to promote awareness.
- The remnant vegetation containing the Perenjori population has now been fenced. It is not considered necessary to fence the populations near Cue, due to the lack of grazing stock and goats in the area.
- Material was collected from each of the populations to undertake genetic analysis to determine if the disjunct populations are different taxa as suspected. Since then, the botanist who described the species has indicated that there is sufficient morphological difference for them to be separate subspecies. The genetic work is still in progress to see if the results support the morphological evidence.

***Eremophila viscida* (CR)**

An IRP has been prepared for this species (2003 – 2008) which details recovery actions. The criteria for success of this IRP were achieved during 2004 (The number of individuals within populations or the number of populations have increased).

- Further surveys in Barnong Conservation Park were conducted during 2004 and populations located during 2003 were more fully surveyed and found to be very extensive, one population exceeding 2000 individuals. Three new populations were also surveyed in this reserve.
- Liaison with relevant land managers has been maintained.
- A poster sheet for this species has been prepared and printed in order to promote awareness.
- Monitoring of original disturbance trial plots continued during 2004. No new seedlings have been recorded, possibly due to continued drought conditions.

***Eucalyptus beardiana* (EN)**

Management requirements which have been implemented include:

- Further survey in Kalbarri National Park, near a known population, resulted in 5 new populations being surveyed. Each of these will require voucher specimens being collected for verification with the WA Herbarium, due to the presence of hybridization within this species.
- Markers have been installed on firebreaks near new populations.
- Several known populations were monitored during 2004.
- Liaison with property owners has continued during 2004.

***Eucalyptus blaxellii* (VU)**

Management requirements, which have been implemented, include:

- Several populations of this species were monitored during 2004.
- Two small new populations of this species were surveyed in a newly reserved section of Moresby Conservation Park. Further survey in appropriate habitat will be opportunistic, in conjunction with survey for *Drummondita ericoides*.

***Eucalyptus crucis* subsp. *praecipua* (EN)**

An Interim Recovery Plan (2004 – 2009) has been prepared for this subspecies. Management requirements, which have been implemented include:

- All populations were monitored in 2004, particularly with respect to grazing pressure and recruitment. No recruitment has been observed and grazing pressure is at fairly low levels.
- Seed was collected from populations for storage in the Threatened Flora Seed Centre.
- Liaison has been maintained with the relevant pastoralist.
- Populations have not been impacted by fire.

***Eucalyptus cuprea* (CR)**

Recovery actions for this species in 2004 have included:

- Populations were monitored during 2004 and found to be in a stable condition.
- The species was surveyed for in Howatharra Nature Reserve and Moresby Conservation Park however no new populations were located. The species is still listed as Critically Endangered and further survey of the Galena area is planned for 2005.

***Eucalyptus synandra* (VU)**

Management requirements, which have been implemented, include:

- Several populations were monitored during 2004.
- All road verge population are now marked.
- Liaison has been maintained with relevant land managers.
- No populations were impact by fire.
- Further survey has been conducted in the vicinity of Koolanooka, Karrara and Lochada.

***Glyceria drummondii* (EN)**

Management Requirements, which have been implemented, include:

- Both populations of this species were monitored on several occasions during winter and spring 2004. Due to drought conditions it was not possible to distinguish any plants.
- Further survey for this species is intended during a favorable season.
- Weed invasion is a serious issue at one population and the site was visited with Kate Brown, a weed specialist from CALMs Urban Bushland group, in order to provide advice on control measures. It was determined that weed control for this DRF grass will be extremely difficult without germinants of the DRF being first distinguished.
- Liaison with the landowner adjoining the road verge population on Scroops Road (pop 2) has resulted in this population now being fenced in the adjoining paddock. Information was also provided suggesting the DRF grows in other areas of his property (only in a wet year).

***Grevillea bracteosa* (EN)**

Management requirements which have been implemented include:

- All populations were monitored during 2004 and resurvey recorded a greater number of plants and a new subpopulation at one population.
- Notification letters were delivered to property owners and they are committed to assisting in protecting the flora.
- Further survey in Moresby Conservation Park resulted in survey of a large secure population of this species.

***Grevillea cristineae* (EN)**

Management requirements which have been implemented include:

- The Geraldton District populations were monitored during 2004.
- Liaison with the Shire of Northampton regarding road verge population has been maintained.
- Populations in the Geraldton District have not been impacted by fire.

***Grevillea murex* (EN)**

Management requirements which have been implemented during 2003 include:

- Survey for this species during 2004 was opportunistic when working in the Yandanooka area.
- All Geraldton District populations were monitored during 2004 and markers were recorded at each road verge population.
- Liaison with the Mingenew and Morowa Shires has been maintained.
- Seed was collected for storage with the Threatened Flora seed centre.

***Grevillea phanerophlebia* (CR)**

An Interim Recovery Plan (2001 – 2004) was in place for this taxon. The IRP criteria for success for this taxa was achieved during 2004 due to the location of a new population by a Recovery Team member, just south of the District boundary. The species is still very low in numbers and further recovery actions detailed in the IRP will be implemented during 2005 following the outcome of research into the taxonomic status. Implementation of the recovery actions during 2004 follows:

- Research clarifying taxonomic status has been conducted and the outcome is expected in the near future.
- Surveys by recovery team members have resulted in a new population being located in the Three Springs Shire.
- All populations were monitored during 2004.

***Gyrostemon reticulatus* (CR)**

An IRP (2002 – 2007) is in place for this species and implementation of the recovery actions during 2004 has included:

- Areas have been identified for further survey for this species during 2005 and the species was searched for on Barnong Conservation Park, in areas recently burnt.

- Brother Van Veen at the Tardan mission is actively searching for the species and has located one new plant at a site near a gravel pit on the mission property. He has also assisted in determining areas for future survey.
- Populations were monitored during 2004. Due to the species being a disturbance opportunist populations have continued to decline.

***Halosarcia bulbosa* (EN)**

Management requirements which have been implemented include:

- The Geraldton District has continued to monitor the population regularly. The population was recorded as being in a healthy condition with fencing and markers in place.
- The issue of draining saline land in the Morowa Shire could potentially impact on this species and its habitat and comments have been provided following an applications to drain into this drainage line.
- A proposal to transport Iron Ore fines from the Koolanooka Hills by road or rail through this population has potential to impact and will require attention during 2005. Consultants have undertaken detailed survey and mapping of the population and will be required to undertake quarterly monitoring of the population should the road/rail upgrade and Iron Ore transport be approved.
- Liaison has been maintained with the Morowa Shire.

***Hybanthus cymulosus* (CR)**

Implementation of management requirements for this taxon has been as follows:

- The Recovery Team has continued to maintain liaison with the land managers, particularly in relation to feral goat control. The care taker at Mt Gibson is familiar with this plant and is actively looking for new populations.
- Survey during October 2004 resulted in the relocation of the species at Mt Singleton and on Mt Gibson. Over 250 plants were recorded on Mt Gibson.
- Fencing of a large section of the Ninghan pastoral lease, which includes the Singleton Range was scheduled to begin in late 2004. In the interim, wire cages have been installed to protect the plants from goats on Ninghan.
- Seed was collected from this species for storage at the Threatened Flora Seed Centre.

***Hypocalymma longifolium* (EN)**

An Interim Recovery Plan (2001 – 2004) was in place for this species and implementation of the recovery actions has included:

- A field trip was undertaken in 2003, during which material was collected at both disjunct populations (Yerina Spring and Murchison House) of this species and morphological differences have been observed, which suggest they may not be the same taxon. It is likely that the Murchison House plants will remain as *H longifolium* and the Yerina Spring plants will change to *H angustifolium* subsp. Yerina, however this change has not yet been finalized.
- Survey was conducted in swampy sections of the Hut River south of the Yerina Spring, however no new populations have been located.
- The Yerina Spring population was monitored several times during 2004. Initially the Yerina Spring area was found to have been almost totally burnt out by a wildfire, with less than 50 plants remaining. Later inspection recorded that plants were beginning to re-sprout from bases which indicated that underground root material have survived the wildfire. It was also discovered that new plants had germinated from seed following the fire.
- Seed was collected for storage in the Threatened Flora Seed Centre from those plants that had not been burnt in the wildfire.

***Lechenaultia chlorantha* (EN)**

Management requirements have been implemented as follows:

- Several populations of this species were monitored during 2004.
- Further survey will be scheduled for 2005.

***Leucopogon marginatus* (EN)**

Management requirements which have been implemented include:

- Most populations of this species were monitored during 2004.
- During 2004 further survey was conducted in Wicherina and Burma Road Reserves. At Wicherina this DRF was found scattered over a large area extending from one population to the other. At Burma Road one population was found to be far more extensive.
- Burma Road Nature Reserve which contains a large number of populations of this species, was burnt in a wildfire during the 2004/05 season, however not all populations were destroyed. An IRP is to be prepared during 2005 which will include recovery actions relating to recovery of the burnt populations and future fire protection.

***Pterostylis* sp Northampton (CD Hopper 3349) (CR)**

The taxon is still extremely rare and a revised IRP has been prepared. Implementation of recovery actions during 2004 has included:

- District staff continued to liaise with the Northampton Shire regarding management of this population, particularly in regard to a proposal to widen the Port Gregory Road, and where this species occurs on a Shire Reserve.
- All populations were monitored during August 2004. At one population, where no plants had been found for over five years, 9 plants were found during 2004.
- Further surveys were conducted on private property with suitable habitat however no new populations were located. Liaison with a community member is providing information may lead to new areas for survey during 2005, on private property.
- A BGPA botanist has collected material from this taxon during 2004 and attempted to propagate this orchid, the success has yet to be determined. During 2004 soil was collected from the field in order to conduct further propagation research into the soil fungi required for seed germination. A translocation is in progress in conjunction with BGPA and feral pig proof fencing is planned for the translocation site, which is also the population which was refound during 2004.

***Ptilotus fasciculatus* (EN)**

Management requirements for this species during 2004 has been as follows:

- Areas for further survey were identified and several of these were surveyed during 2004.
- The known population was monitored during 2004 and found to be in a stable condition.
- Liaison with the Shire of Chapman Valley regarding management of the roadside portion of this population has continued.
- Seed was collected for storage with the Threatened Flora Seed Centre.

***Stachystemon nematophorous* (EN)**

Management requirements for this species during 2004 have been as follows:

- Several populations were monitored during 2004.
- Further survey determined several populations in Kalbarri National Park to be far more extensive than previously recorded.

***Stylidium coroniforme* (EN) = *Stylidium amabile* (P1)**

- An IRP for *Stylidium coroniforme* (2003 – 2008) was prepared for this taxon, including both Wongan Hills and Maya populations.
- During 2004 it was determined that the Maya populations of this species are a different taxon to those located in the Wongan Hills.
- The Maya populations have been given the name *Stylidium amabile* which will be listed as DRF following Ministerial approval. In the interim the species has Priority 1 status. The IRP will continue to be used to guide recovery actions until there is another IRP in place specifically for *Stylidium amabile*.

***Stylidium wilroyense* (P2)**

Disjunct populations of this species occur at Wilroy and Coolcalalaya, in very low numbers and in different habitat and it has been suggested that these may be different taxa.

- The Wilroy population was resurveyed during spring.
- The species was re-found at Coolcalalaya by volunteers.
- The species requires nomination as proposed DRF, and clarification of the taxonomic status.

***Verticordia spicata* subsp. *squamosa* (CR)**

A new IRP (2004 - 2009) has been for this subspecies. Implementation of recovery actions over the period of this report has been as follows:

- Regular monitoring of populations has continued.
- Monitoring of the translocated population has continued during 2004 and 10 of the original 29 plants have survived their third summer (dispite drought conditions). The majority of plants flowered and produced fruit in 2004. More seed was collected from populations during 2004, and forwarded to the Threatened Flora Seed Center for storage. More plants are being propagated by BGPAs Kings Park nursery for translocation during 2005.

***Wurmbea tubulosa* (VU)**

An IRP is currently in preparation for this species. Recovery actions implemented during 2004 have included:

- Populations were monitored during there flowering period in 2004.
- Two populations that had not been located for many years were relocated and found to be very extensive.
- Weed control was undertaken at one population in a Nature Reserve.
- Two new subpopulations were surveyed in Depot Hill Reserve.
- Seed was collected for storage with the Threatened Flora Seed Centre.

Threatened Ecological Communities

Acacia rostelifera low forest with scattered *Eucalyptus camaldulensis* on Greenough Alluvial Flats. A nomination was submitted to have this community classified as "Presumed Totally Destroyed". An estimation of actions required to restore the community was prepared and submitted with the nomination

Plant assemblages of the Koolanooka System

The Koolanooka Hills are the subject of several mining applications and both District and WATSCU staff have been liaising with the mining companies and their consultants regarding their proposals. Comment has been provided on the scoping document for a DSO transportation of Iron Ore Fines project.