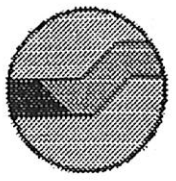




# The Plant Press

Western Australian Regional Herbaria Newsletter

Volume 4 December 1998



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## Florabase Launched

The Environment Minister Cheryl Edwards has officially launched **FloraBase** along with a new CALM initiative called **Western Everlasting**. FloraBase is one of the key elements in the Regional Herbaria Project because it enables access to flora information based on specimens in the CALM Herbarium.

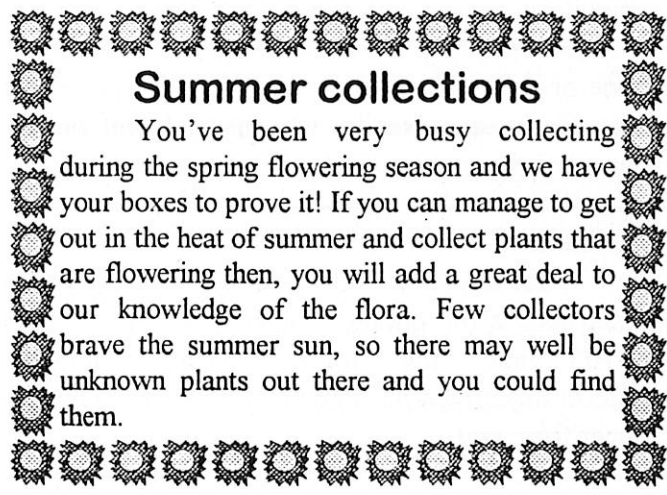
Western Everlasting is a major Government initiative aimed at conserving WA's threatened plant species. Threatened flora management programs would be finalised for each region or district in the South-West Botanical Province. The Minister recognised that public education was an important goal of 'Western Everlasting'. Public support and understanding of nature conservation initiatives is vital for the protection of our wildflower heritage and this is where the Regional Herbaria Project can perform a vital role through enhancing information about our flora. The Regional Herbarium groups are already adding very significant information to underpin conservation in WA. They can become even more vital components of the Western Everlasting effort.

FloraBase, which is managed from the CALM Herbarium, is a sophisticated information system. It brings together the WA plant names database (WACENSUS), the specimen database (WAHERB) and the Descriptive Catalogue which was developed in collaboration with the WA Wildflower Society and Kings Park and Botanic Garden

If you can access Internet then try: <http://www.calm.wa.gov.au/science/florabase.html>

Access is free at the general user level. Higher levels of access are charged except in the case of cooperative efforts with the CALM Herbarium. Regional Groups which are registered as part of the Regional Herbarium scheme are clearly part of a cooperative network and can access at a higher level (see details on the registration page of the web site). A nominated person from each group will be allocated a password and given the desired access. One of the many uses is that you can type in the barcode number of your herbarium specimen which is duplicated in the CALM Herbarium and find the current name as well as a short description and a map of known distribution.

Neville Marchant



### Summer collections

You've been very busy collecting during the spring flowering season and we have your boxes to prove it! If you can manage to get out in the heat of summer and collect plants that are flowering then, you will add a great deal to our knowledge of the flora. Few collectors brave the summer sun, so there may well be unknown plants out there and you could find them.

**We need annuals too!**

Most of the specimens coming in to the Plant Identification Unit are shrubs and this is fine, many WA plants are shrubby. However, where you see annual plants do collect them too, even if they are weeds, as these two categories of plants are under-represented in the Research Collection. It is important that the collection in your Regional Herbarium, and thus in the Research Collection in Perth also, reflects a true picture of the total flora.

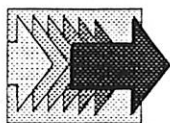
## The Long Wait

R.J. Cranfield

This is a saga for those who consider that identifications take too long and that botany is extremely slow in coming up with new names!

In 1889 Mrs Forrest collected a sample from Champion Bay and sent it to Melbourne Herbarium for identification. A duplicate was sent to Perth, I suspect during the 1970's, for identification; it was stored for a number of years before being mounted and placed into the collection as an unknown *Pityrodia*. During 1998 Mrs Barbara Rye commenced sorting *Pityrodia* to ensure homogeneity within the collection. The sample was recognised as an *Eremophila* species and passed to Ray Cranfield for identification. It was identified as *Eremophila mackinlayi* subsp. *mackinlayi*, a species occurring in the Murchison area.

The FloraBase description of this plant includes the information that it is a shrub to 2.5 m tall, with blue to purple flowers from July to October.



**I need Your Support!!!!**

Hi, my name is Gloria Lorenz and I am a student at Murdoch University, writing my honours thesis in Social Ecology. As I believe that an active Community is vital in the fight to preserve our natural resources, I have chosen an honours topic which combines my love for the native bush and its flora with community aspects: community involvement and the regional herbaria in Western Australia. The focus of the thesis will be on 'community science', which can be described as the systematic investigation and recording of events in the natural world by community groups

## Remote collections are worth it

R.J. Cranfield

The value of an opportunistic collection, especially in remote areas of WA, was emphasised recently with the discovery of an important specimen. The specimen was collected in 1958 from the Rawlinson Range near Giles by J.B. Cleland, a professor of pathology at the University of Adelaide with an interest in arid area botany and especially in Eucalypts. He lived from 1878-1971, was knighted and has several plants named after him, eg. *Eucalyptus clelandii*. This specimen is sterile and it was fortunate that it had been retained in the Herbarium as sterile vouchers were frowned upon, considered useless and just cluttering up the Herbarium vaults with non-taxonomic material.

The original, incorrect, field identification was as an *Acacia* species; it was later considered to be possibly *Pityrodia lepidota*. This also proved to be an incorrect determination and it was then thought to be a *Comesperma* species or a close relative. In fact the material is *Comesperma viscidulum*, a priority species thought to occur in WA but not represented by a voucher until the resurrection of this sample. Although this species also occurs in the Northern Territory, it is considered rare there as well.

It is a shrub to about 0.7 m tall with the common name of Viscid Milkwort. Its conservation status is P2.

munity groups or members of the public who are not necessarily professionally qualified. In about one or two month's time and with the support of Jan Gathe and Neville Marchant, I will be approaching some regional groups with a few questions about their activities for 'their' regional herbarium.

But if you would like to get in touch with me, here is my phone number in Perth: 08 9433 2105 and my internet email address: [glorenz@carmen.murdoch.edu.au](mailto:glorenz@carmen.murdoch.edu.au). I would love to hear from you.

# Workshops 1998

Five workshops have been held since the last Plant Press was published. The first was at Wubin on 23rd July, then at Nabawa on 15th August and Badgingarra on 16th August. These 3 districts were chosen in the hope that Regional Herbaria could be developed there, but for different reasons. The fourth workshop was held in Perth on 21st and 25th October and the fifth at Tammin on 28th & 29th October - more about that later.

Wubin is in the north-eastern Wheatbelt and was extensively cleared in the 1960's and 1970's with few nature reserves being put aside to conserve the flora. Nabawa in the Chapman River valley, together with the Greenough River valley, both in the Geraldton district, have some of our oldest farms. Also some native plant collections made in the Geraldton district and housed in the CALM herbarium and elsewhere are of historical importance. Badgingarra in the Northern Sandplain is a more recently developed area. There are a number of large and important Nature Reserves and some landowners have left significant areas of their farms as virgin bush. The flora of this district is incredibly rich with more than 10% of the state's known flora; there are also many undescribed taxa. Many of the taxa are found nowhere else; several are Priority or Declared Rare Flora.

One or more Regional Herbaria in these 3 districts could contribute enormously to our knowledge of the state's flora - past and present.

## Wubin Workshop 23.7.1998

This workshop, most ably organised by Joy Wornes and Judith Reudavey, was attended by people from Wubin, Buntine, Jiberding and Dalwallinu. A reserve right on the edge of town was used to illustrate collecting techniques. One plant there was of particular interest - this was *Schoenus calcatus* which

was described as recently as 1997 (*Nuytsia* Vol. 11 No. 2, 1997). It is a very small cushion plant in the family Cyperaceae which was growing in winter damp areas. It had not previously been recorded further north than Ballidu. This plant currently has Conservation Status P3, but the botanist Eleanor Bennett tells me she has seen it at quite a few localities. So if you find any cushion plants (especially ones that don't look at all like Cyperaceae!) send them in and we could learn more about the abundance, distribution and hence Priority status of this species.

The Wubin Progress Association is now one of our newest Regional Herbaria and very welcome indeed. When you are next in Wubin, stop and have a look at their excellent Heritage Wheatbin Museum, their Rock Collection and very soon their Plant Collection - all on railway land opposite the pub!

## Nabawa Workshop 14.8.1998

This was very well organised by Anne-Marie O'Callaghan and Jenna Brooker and there was a large roll-up of over 40 people in the Nabawa Community Centre. Participants came from Greenough, Geraldton, Nabawa, Northampton and Coolcalalaya Station, east of Kalbarri. Jan was unable to be with us on this occasion, but we had the bonus of Neville Marchant's presence. Our collecting sites were south-west of Nabawa on 2 different areas of heathland, one on private property and one near the rubbish tip. All nine of us were fully occupied with such a large number participating. After lunch there was a lively discussion and it is hoped that there may be several Regional Herbaria started in the area.

## Badgingarra Workshop 15.8.98

This was held at Hi-Vallee Farm, the property of Don and Joy Williams, which has large areas of bush which they have left undisturbed.

(Continued on page 4)



(Continued from page 3)

Thanks to Joy's organisation, there were over 40 people gathered in their shearing shed for morning tea and damper, after which we collected on 2 different heath areas on the property.

### Databasing the Bush 21 & 25.10.98

This one-day workshop was an introduction to the use of computers to assist Regional Herbaria in identifying and recording information about their collections, using programs which have been produced by CALM staff at the Herbarium. A total of 16 people attended the Monday workshop and 9 the Friday one. The day started with an introduction to MAX, which provides an electronic collecting book, and through its connection to WACENSUS, a check on current names and distributions. After morning tea, the databasing process was demonstrated and then FLORABASE, the CALM Herbarium's website, which brings together, in a user-friendly format, information from the Herbarium's databases on names, common names, distribution maps, composite images, specimens and library collections. There was hands-on time for MAX and FLORABASE before lunch. After lunch, Bruce Maslin demonstrated electronic multi-access keys to Acacias and the participants visited the image capture team to see that process. The morning sessions were repeated on Wednesday 23rd October for Herbarium volunteers.

### Tammin Workshop 28-29.10.1998

The Tammin workshop was different from previous workshops in that it was initiated by the new Tammin Regional Herbarium. Glenice Batchelor approached us with the idea of starting their collection by inviting volunteers from the CALM Herbarium to work alongside members of the Tammin community. The workshop was also different in that it was financed by a Natural Heritage Trust grant that the Tammin group had acquired to set up their regional herbarium.

Jan Gathe and four volunteers travelled to Tammin and participated in two very successful collecting trips, one in the afternoon of arrival and another the next morning before returning to Perth later that day. The party was accommodated at the ALCOA Landcare Education Centre at Tammin. Thus the costs associated with the trip were met by the Tammin Regional Herbarium through their Natural Heritage Trust grant, whereas all previous workshops were funded by the CALM herbarium and Greening WA. From 1999, Greening WA will no longer be helping to fund the workshops. Tammin has set a good example that other regional herbaria in conjunction with their Landcare group may be interested in following.



*Wishing all WA Regional Herbaria  
a Merry Christmas and a Happy New Year  
Jan, Mike, Margaret & R. H. Volunteers*

## WA Flora Image Database

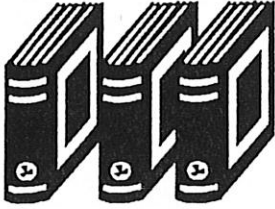
Kath Napier

Those of you who have had the opportunity of using Florabase will have seen the composite images which are available at the moment for about 600 of WA's plants. These images are produced by a dedicated team of Wildflower Society volunteers at the Herbarium by scanning slides and prints, which the photographers have made available for that purpose. Of the 12,000+ species of our wildflowers, there are naturally many for which we have insufficient images. If you are willing to lend us your slides or prints, we assure you that they are kept locked up when not in use. The photographer's name is always acknowledged on the composite.

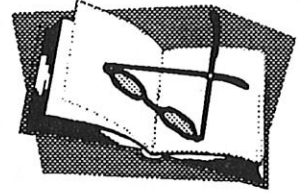
Listed below are a few of the plants for which we need further images. The letters alongside indicate: f - flower; d - botanical detail such as bud, bark, fruit; habit - the whole plant; e - environment - a picture of the natural habitat.

<b>Proteaceae</b>			<i>Darwinia</i>	<i>D. carnea</i>	f,h,e
<i>Grevillea</i>	<i>G. annulifera</i>	d,h,e		<i>D. macrostegia</i>	f,h,e
	<i>G. argyrophylla</i>	d,h,e		<i>D. meeboldii</i>	f,h,e
	<i>G. batrachioides</i>	f,h		<i>D. oldfieldii</i>	h,e
	<i>G. candelabroides</i>	d,h,e		<i>D. squarrosa</i>	f,h,e
	<i>G. fasciculata</i>	h,e		<i>D. virescens</i>	d,h,e
	<i>G. hirtella</i>	h,e	<i>Melaleuca</i>	<i>M. filifolia</i>	h,e
	<i>G. teretifolia</i>	h,e		<i>M. fissurata</i>	h,e
	<i>G. wickhamii</i>	h,e		<i>M. incana</i>	d,h,e
<i>Hakea</i>	<i>H. amplexicaulis</i>	f,h,e		<i>M. laterita</i>	h,e
	<i>H. conchifolia</i>	d,h,e		<i>M. leptospermoides</i>	h,e
	<i>H. cristata</i>	e		<i>M. striata</i>	h,e
	<i>H. cucullata</i>	h,e		<i>M. suberosa</i>	h,e
	<i>H. francisiana</i>	e	<b>Myporaceae</b>		
	<i>H. multilineata</i>	d,h	<i>Eremophila</i>	<i>E. gilesii</i>	f,h,e
	<i>H. prostrata</i>	e		<i>E. graniticum</i>	f,h,e
<b>Droseraceae</b>				<i>E. lactea</i>	e
<i>Drosera</i>	<i>D. andersoniana</i>	f,h,e		<i>E. leucophylla</i>	e
	<i>D. bulbiger</i>	f,h,e		<i>E. muelleriana</i>	d,h,e
	<i>D. huegelii</i>	d,h,e		<i>E. oldfieldii</i>	f,h,e
	<i>D. marchantii</i>	d,h,e		<i>E. resinosa</i>	f,h,e
	<i>D. stricticaulis</i>	h,e	<b>Goodeniaceae</b>		
<b>Papilionaceae</b>			<i>Dampiera</i>	<i>D. alata</i>	d,h,e
<i>Chorizema</i>	<i>C. dicksonii</i>	f,e		<i>D. decurrens</i>	h,e
	<i>C. ilicifolium</i>	e		<i>D. diversifolia</i>	f,e
<b>Thymelaeaceae</b>				<i>D. eriocephala</i>	h
<i>Pimelea</i>	<i>P. angustifolia</i>	d,h,e	<b>Stylidiaceae</b>		
	<i>P. longiflora</i>	f,h,e	<i>Stylidium</i>	<i>S. calcaratum</i>	h,e
	<i>P. microcephala</i>	f,h,e		<i>S. diversifolium</i>	h,e
	<i>P. sulphurea</i>	h,e		<i>S. expeditionis</i>	h,e
<b>Myrtaceae</b>				<i>S. junceum</i>	h,e
<i>Calytrix</i>	<i>C. angulata</i>	f,h,e		<i>S. mimeticum</i>	h,e
	<i>C. brevifolia</i>	h,e		<i>S. schoenoides</i>	h,e
	<i>C. superba</i>	d,h,e		<i>S. wilroyense</i>	d,h,e
	<i>C. tenuiramea</i>	f,h,e			

We would appreciate any help you can give us.



## New Books



Brown, A. Thomson-Dans, C. Marchant, N.G. ed. 1998. Western Australia's Threatened Flora. Dept of CALM. \$29.95

Australian Biological Resources Study. 1998. Flora of Australia. Volume 48. Ferns, Gymnosperms and allied groups. CSIRO Hard or soft cover. 25% discount.

Harris, J.G. Harris M.W. 1994. Plant Identification Terminology, an illustrated glossary. Spring Lake Publishing. New stocks of this useful book, slight price increase due to lower A\$. \$22.00

WA Dept of CALM. 1988. Guide to the Bibbulmun Track: Northern half, Kalamunda to Donnelly River Village. Dept of CALM. \$29.95

Bibbulmun Track maps available in a set of 4 for each half of the Track, \$20.00, or as single maps \$5.50.

Ralph, Murray. 1994. Seed collection of Australian native plants for revegetation, tree planting and direct seeding. The Author. \$15.00

Ralph, Murray. 1994 Growing Australian native plants from seed for revegetation, tree planting and direct seeding. The Author. \$20.00

Jill, Duchess of Hamilton & Bruce, J. 1998. The Flower Chain: The early discovery of Australian Plants. Kangaroo Press. \$39.95

These books can be obtained through the WA Wildflower Society, in most cases with a discount on the prices indicated. Orders can be sent to the following address:

WA Wildflower Society  
Attn. Mrs Barbara Backhouse  
Unit 8/38 Ednah Street  
Como WA 6152



## New Regional Herbaria



We are pleased to welcome a number of new Regional Herbaria and look forward to working with you:

Badgingarra, Eneabba, Jurien, Margaret River, Rockingham, Rottnest Island, Wubin.

The Bunbury Regional Herbarium has been relocated to the Bunbury CALM office and amalgamated with the Central Forest Region herbarium already in that building.

## Declared Rare and Priority Flora

Dr Ken Atkins, Wildlife Conservation Branch

Under the Wildlife Conservation Act 1950, the Hon Minister for the Environment may declare any Western Australian native flora to be 'rare flora' (DRF) if he believes that it is likely to become extinct or is rare or otherwise in need of special protection. In practice, a taxon (species, subspecies or variety) is usually considered for declaration if there is sufficient evidence that it may be threatened with extinction in the short to medium term. This may be as a consequence of its rarity, or the existence of a threat from which the flora needs special protection. Hence declared rare flora are also commonly referred to as 'threatened' flora.

Special protection is afforded to declared rare flora under the Act, with the written consent of the Minister being required before such flora can be taken. The term 'take' refers to either direct means, such as taking a scien-

scientific sample, collecting seed, clearing an area; or through indirect means, such as burning, grazing, introduction of pathogens, or the alteration of the water table. To take DRF without the written consent of the Minister is an offence subject, on conviction, to a substantial penalty. The new threatened flora book will make it easier to recognise DRF taxa which may be in your area.

Complementary to the DRF, CALM maintains a supplementary listing, the Priority Flora List. This lists those flora which may be rare or threatened but for which there is insufficient survey data available to accurately determine their true status (poorly known), plus those taxa which have been determined as being rare, but are currently not threatened. The Priority Flora are ordered according to the perceived urgency for further survey, as indicated by their definitions, shown in the table below.

### CONSERVATION CODES FOR WESTERN AUSTRALIAN FLORA

**R: Declared Rare Flora - Extant Taxa (= Threatened Flora = Endangered + Vulnerable)**

Taxa which have been adequately searched for, and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.

**X: Declared Rare Flora - Presumed Extinct Taxa**

Taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.

**1: Priority One - Poorly Known Taxa**

Taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.

**2: Priority Two - Poorly Known Taxa**

Taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.

**3: Priority Three - Poorly Known Taxa**

Taxa which are known from several populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in need of further survey.

**4: Priority Four - Rare Taxa**

Taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5-10 years.

(Reproduced with permission from *Nuytsia*, the journal of the Western Australian Herbarium)





# MONITORING RARE FLORA POPULATIONS

Populations of declared rare and priority flora require monitoring to ensure that the plants and their habitat are not under threat, and to provide information on the nature, condition and dynamics of the population for management.

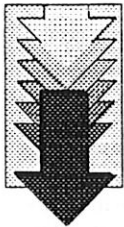
As at 1998, there were 327 extant declared rare flora, and 1959 priority flora representing a very large flora monitoring commitment to the State. Currently about 10% of this monitoring is being undertaken by community volunteers which is a significant contribution to Western Australian flora conservation. A specific rare flora volunteer program is operating through CALM for coordinating this monitoring, although many volunteer reports are gratefully received outside this program, including via the lodgement of herbarium specimens and the extraction of details from the specimen labels.

Taxa of flora that are more critically threatened, or which are known from only a few populations require more frequent (annual)

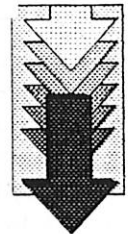
monitoring because any change in their condition or increase in a threatening process can mean a real threat to the continued existence of that taxon. Similarly, individual populations growing on land under threat, such as on road reserves, mining tenements or urban areas, require more frequent monitoring to ensure that the distribution and diversity of the taxon is conserved.

Other rare or priority flora that are growing in more protected environments may be monitored less frequently, ca. up to every five years, depending on the status of the taxon and the land on which it grows.

The Department of Conservation and Land Management maintains a threatened flora database to assist in the collation of information on the individual populations of declared rare or priority flora. Because of the size of our flora, and the number of taxa listed as declared rare or priority, not all taxa have been added to the database yet. All declared rare flora are entered, but the entering of Priority flora is an on going process



## Please let us know where you are!



When we get queries about plant identifications from people in areas with a regional herbarium, or if a regional herbarium person is visiting another area, it would be good to know where to find the local herbarium, so please give us this information so that it can appear in a future "Plant Press".

Regional Herbarium Name.....

Address where specimens are kept.....

Opening times or contact details for people wishing to see the specimens.....

Regional Herbaria please complete this information and send it to us at:  
 Regional Herbaria Program, Western Australian Herbarium, Locked Bag 104,  
 BENTLEY DELIVERY CENTRE, WA 6983