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DEPARTMENT OF PARKS AND WILDLIFE

Environment and Conservation



Wandoo Crown Decline Surveys

Wink Lindsey, Assistant Conservation Officer, Wellington DEC

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Concern for the health of the Wandoo Woodland areas between Collie and Darkan, coupled with assistance from the Wandoo Recovery Group has led to the first surveys of Wandoo Crown Decline being conducted in the Collie area.

Darkan Herbarium Volunteers Val Crowley and Lyn White, along with Department of Environment and Conservation (DEC) staff, Wink Lindsey, Fiona Kirkpatrick and Russell Smith spent the day assessing Wandoo Crown Decline in the Bennelaking Proposed Conservation Park, earlier this year.

Kim Whitford (DEC), as part of the Wandoo Recovery Group travelled from Dwellingup to explain the aims of the surveys and to assist with the survey transects, to ensure consistency and correct procedure.

The aims of the surveys are to help develop an understanding of the factors effecting Wandoo decline and to accurately assess the health of wandoo ecosystems. The main symptom in the initial stages of decline,

known as “flagging”, is the browning off and death of the leaves in the trees crown, which is most noticeable at this time of the year. The cause/s of Wandoo decline are not yet clear, however factors such as reduced annual rainfall and wood-boring insects may play a role.

Wandoo is not only valued for its timber and nectar rich blossom, which produces sought after honey, but are also important habitat tress for a myriad of invertebrates, birds and mammals, such as Numbats.

The results from this survey and others carried out in the Wandoo Woodlands between Collie and Darkan will be sent to the Wandoo Recovery Group and will be used as a part of ongoing research into Wandoo decline.

Members of the Wandoo Recovery Group are from various agencies, Government and non-government, and also community interest groups. They oversee Strategic planning and are involved in the co-ordination of research into Wandoo decline and the development of community awareness programs. ☀

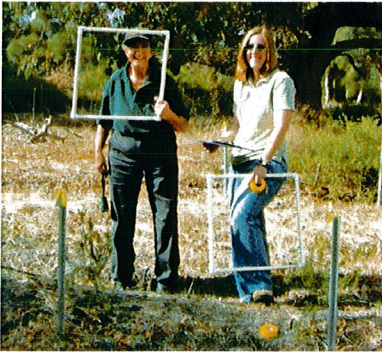


DEC staff Kim Whitford, Fiona Kirkpatrick, Russell Smith and Darkan Herbarium volunteers Val Crowley and Lyn White



The Editors Spiel

Frances Kirchner, Herbarium Liaison Officer, DEC Bunbury



South West Regional Herbarium volunteer Olga Green and myself assessing translocated plants in the Busselton Ironstone Communities.

Welcome to winter! Comments around the office suggest its more like spring but I've just got back from Hong Kong where its 32° and 90% humidity, so this feels enough like winter to me!

We have gone through a few changes here in the Bunbury Regional office in the last few months with a number of staff members leaving us to explore their career opportunities elsewhere meaning that we are somewhat under staffed. However I will endeavour to make sure that I am still available to assist you all where I can with queries

regarding regional herbaria activities, orchid surveys or general flora issues.

Thankyou to those who have already signed up for the upcoming orchid season surveys. We are likely to be busy indeed and will contact you shortly with sign-up dates.

To anyone who hasn't registered their interest there is still plenty of time!

I would very much like to start featuring a species or genus each quarter in this newsletter. Articles need only be up to a maximum of 250 words. So please start writing,

I know you all have a favourite plant out there!

For this newsletter to be relevant and informative we require your input and stories from the field so keep those articles coming

Closing date for the Spring editon: 24/08/06. ☼

“Please let me know if there is a particular [orchid] species you are interested in and would like to be involved in surveying”

A Busy Autumn at the South West Regional Herbarium

Volunteers from the South West Regional Herbarium

In April the South West Regional Herbarium volunteers were treated to a field walk with Andrew Webb from GeoCatch. Although early in the growing season Manea Park revealed some interesting species for Andrew to demonstrate their characteristics. *Lomandras*, one of his special interests, were fairly abundant and varied. His knowledge of the trees, small plants and sedges was all fascinating to the admiring group of volunteers. we thank Andrew for his time and enthusiasm.

In May a group of Herbarium volunteers were treated to a walk in the bush with a difference. Ray Cranfield walked us

through a section of Manea Park looking at fungi and lichen something not familiar to many of us. We were easily caught up in Rays enthusiasm for the subject, our eyes drawn to a different level.

Proceeding our walk Ray spoke to us at the Herbarium where his passion for this type of vascular plant was obvious.

He explained how to collect lichens and what tools to carry into the field including a wood chisel for lifting rock slices. Two informative posters and an example of a collecting sheet were left at the Herbarium for our volunteers to use. Ray encouraged us to view a number of specimens through a microscope opening up a whole new world of plant life to us. ☼



Andrew Webb with South West Regional Herbarium volunteers



Passion for Plants

As appeared in the South West Times, by Danella Bevis

The word flora takes on a whole new meaning for Shirley Fisher, who most loves spending her time immersed in the bushland and wildflowers of the South West - one of the world's biodiversity hotspots.

An enthusiastic member of the Bunbury Naturalists' Club, the South West Regional Herbarium group and the Leschenault Community Nursery, Shirley devotes many of her spare hours to collecting seeds, propagating and growing plants native to the region.

"Someone once said that taking me for a bushwalk was like taking me to the supermarket," Shirley said.

"I find it is such fun and when I am with people, I am always saying 'hey look at this'."

It was not only Shirley's belongings which accompanied her when she, her husband Graham and their three children moved to Bunbury from South Africa in the late 1970s - her passion for nature also followed to the country she now calls home.

Despite moving to one of the more isolated areas in the world, the isolation was far from Shirley's mind when she arrived - she most enjoyed taking note of the differences and similarities between the flora on her Gelorup block and the specimens found in South Africa.

"The first thing I did was buy a five-acre block and the first thing I saw was a natural piece of bush - since then I've just revelled in the bushland of WA," Shirley said.

"The similar species were the protea plants and the rushes and sedges, but the difference included the amazingly poor, sandy soil - that's what I found hard to get used to."

Shirley said her interest in flora stemmed mostly from her mother, who wrote books and articles on garden design.

Now living on a two hectare block in Dunsborough which is surrounded by a native bush garden, Shirley said choosing plants that grew locally often proved to be more successful than those foreign to the area.

"We all have a problem with our English training for soft green grass and roses. It

actually takes a lot of training to see the beauty in our native flora," she said.

Shirley said her favourite native specimen remained the peppermint tree which "grows anywhere and has amazing shape".

"In the sand in the Swan Coastal Plain, for garden plants we have the olive-leaved grevillea and kangaroo paws," she said.

"One of my favourites is the morning iris, it's got strap leaves and blue flowers on a spike."

Shirley said her work at the Leschenault Community Nursery was rewarding because it helped to improve the region's biodiversity and environment.

The nursery collects seeds locally, propagates the plants and later sells or donates the plants, which have been used to improve the banks of the Preston and Brunswick rivers, among many other projects in the Leschenault Catchment Area.

"It's great, you have contributed to biodiversity because these lands were cleared and it's interesting now - more and more people are wanting to put native species back in," Shirley said.

"It's actually preserving the biodiversity, that's why we collect locally, so we can put the local genetic material back in."

"It's amazing how the genetic material does differ, so we try not to import seeds."

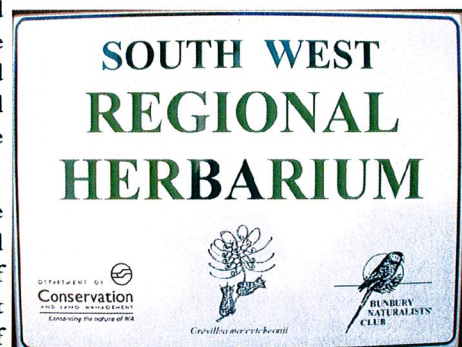
Shirley is also one of 12 volunteers who helps to collect, press, mount and record native species on a database at the Department of Environment and Conservation's South West Regional Herbarium, which houses more than 3000 different specimens.

The oldest was collected in the 1930s and although the group is still trying to discover a new species of native plant, Shirley said being part of the herbarium provided plenty of surprises which continually spurred her interest in all things flora.

"I don't think there's any reason to stop," she said.



"...the first thing I saw was a natural piece of bush - since then I've just revelled in the bushland of WA."

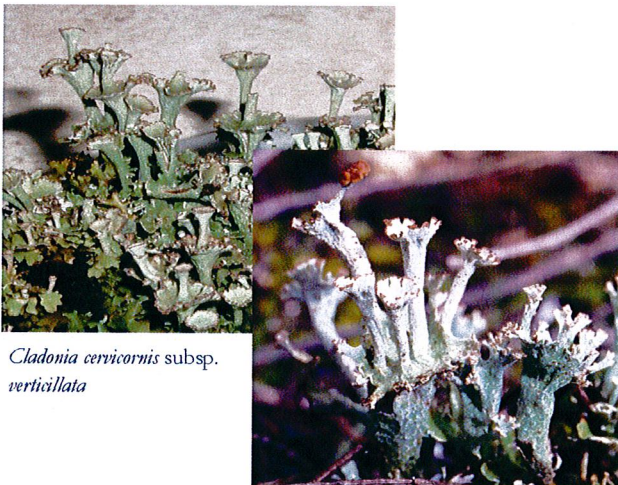


Cladonia - Faerie Castles

R.J.Cranfield, Botanist/Lichenologist CALM Science (WA Herbarium), Manjimup

A widely distributed global species of about 350 known species of which 45 occur in Australia and of this 31 can be found in southern Western Australia. This genus falls into the broad classification encompassing the fruticose type of lichen. Most species of this group can be found in the temperate moist areas of the southwest and are a common forest species. Found to grow primarily on organic material such as decaying wood, moss mats and occasionally on organic rich soils. Mostly growing on the ground level with the occasional species located 1-2 M above the ground. Locations that have high moisture levels and are sheltered from drying elements allow several species to grow in these elevated shrub layers.

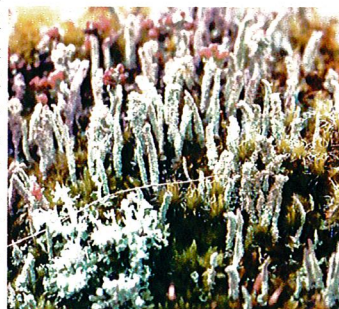
The common name Faerie Castles has been applied to two common species, *Cladonia cervicornis* subsp. *verticillata* and *Cladonia krempelhuberi*. Both of these species look similar and can only be separated by using a series of chemical spot tests. *Cladonia cervicornis* is Potassium hydroxide negative (K-) while *Cladonia krempelhuberi* is K+. The turrets of the castle are formed by the fruiting body (podetia) which has broad cupular scyphi which become edged with spore bearing bodies known as apothecia.



Cladonia cervicornis subsp. *verticillata*

Cladonia krempelhuberi

Not all Australian species develop spores and several others frequently produce sterile podetia's. Many species in this genus reproduce by vegetative fragmentation, which are easily fragmented during the dry desiccated summer months. *Cladonia rigida* is a common species found on decaying wood that has a narrow pointed sterile podetia and no scyphi although spore bodies may occasionally develop. This species has an intense yellow reaction to Potassium hydroxide (K+y).



Cladonia rigida in fruit



Cladonia rigida with sterile podetia

Cladonia sulcata and *Cladonia tessellata* have podetia that have terminal scyphi that are split to form branched type of podetia. *Cladonia tessellata* is distinguished from *Cladonia sulcata* by the splits at the base of the podetia and a chemical response of K- for the former and K+y the latter.



Cladonia sulcata

Cladonia tessellata

Cladonia floerkeana is possibly a rare species for Western Australia with distinct red fruits, but is common in other Australian states and is also commonly found in Europe. Most fruiting bodies of Western Australian species tend to be brown to black.



Cladonia floerkeana

Collections recently made in Western Australia have revealed that there are possibly undescribed *Cladonia* species still to be named and located. Flora of Australia volume 54 is worth reading for further information on this common unusual forest and woodland genus. ☼

Modern Mapping Assists with Flora Searches

Mavis Sowry, Walpole Regional Herbarium volunteer

Nikki Rouse, District Flora Officer, DEC Frankland District

Locating new populations of rare and priority flora species has become easier since the introduction of Geographic information systems (GIS) and mapping software. Global positioning systems (commonly known as a GPS) can record an exact location on the earth's surface, with accuracy to within several metres - making flora populations much easier to relocate!

Another use of GIS is to allow the integration of data sets, particularly the location of rare/priority flora together with vegetation and landform types (eg. Matiske-Havel 2000). This can then be used to target searches for new populations.

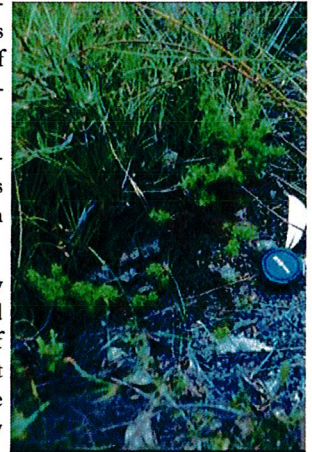
At Frankland District (Walpole) recent searches for *Andersonia auriculata* (a priority 3 species) benefited from this approach. Observations had suggested that *A. auriculata* occurs on south facing dunes or slopes, and disturbed areas along roads. By inputting the

known populations into mapping software, it was confirmed that the species occurs in coastal areas on south side of slopes on the interface of winter wet areas and forest.

By using this information district volunteers were able to find new populations and extend the distribution of known populations.

When DEC staff and volunteers now conduct flora searches they go armed with a landform and vegetation map of the area, allowing them to pin point where the plants are most likely to be growing, increasing the chances that they will successfully locate new populations.

☼



Andersonia auriculata

Photo taken from FloraBase

Lichens and their collection

Mike Webster, South West Regional Herbarium volunteer

Having seen the name on so many specimens and on the computer screen, it was good to meet the owner at last, when Ray Cranfield came to visit us recently. He came to give us an introduction to lichens. We certainly needed it; I am sure many of us were ignorant of which were lichens, algae or liverworts. We were also warned to watch out for "wannabe cryptograms;" such as melted pink plastic tape and yellow marking paint. As if we needed anything else to confuse us!

Lichens are an association of an alga or cyanobacterium and a fungus. Although generally symbiotic (you'll scratch my back and I'll scratch yours), there is now thought to be a degree of parasitism in some cases, on the part of the fungus. The fungus side provides the alga with water and minerals that the fungus absorbs from the air and whatever it is growing on. The alga uses these to make food for the fungus. In a few rare cases, a single lichen fungus can develop into two quite distinct forms, when associating with either a green alga or a cyanobacterium.

Until fairly recently, it was thought that there weren't many species of lichens in Australia. Now that more people are studying them, new genera and species are being identified in numbers. Lichens are often the first to establish in places lacking soil, enabling dust particles etc to accumulate and gradually build up to allow

mosses and perhaps plants to establish. In other places, such as deserts, mountain tops and arctic regions, they remain the sole vegetation. They do not have roots and do not require a continuous reservoir of water, like plants. When growing on plants, they are not parasitic and, because of this, they are often an important part of soil stabilization.

Equipment suggested for collecting included plastic bags, saw, chisel, carborundum stone, hammer and cold chisel. The latter two for breaking a piece from a granite boulder; a chip off the old rock. An angle grinder was also a possible; either rechargeable or with a v-e-r-y long cable. Although doubtless necessary, the bare, new face of rock would look very obvious so paint was suggested. Perhaps the artist amongst us could paint lichen on. The potential habitat is very diverse; not just trees but also tiles, termite mounds, monuments etc. Out in the field, put specimens in the plastic bags, with label attached. Take large enough pieces as more than one species may be present. Back in the herbarium, dry specimens promptly - any which dry out too much can be re-hydrated. For identifying, the shape and colour of the spores can be very important.

Altogether, it was a very interesting day and opened a new avenue for the herbarium.

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Useful Websites:

<http://florabase.calm.wa.gov.au/>

<http://www.calm.wa.gov.au/>

<http://www.lotterywest.wa.gov.au/>

Planet Ark National Tree Day

Sunday 29th July

Planet Ark's National Tree Day is Australia's biggest community tree-planting event and since Tree Day started in 1996 over 10.5million native trees and shrubs have been planted by more than a million volunteers!

Tree planting makes a positive difference to our environment, and the benefits reach into schools and communities, and also help our precious native animals and plants survive in Australia's diverse natural settings.

Find out where your local site is or organise a site of your own by visiting the Planet Ark website:

<http://www.planetark.com/treeday> or calling 1300885000.

2007 WA Environment Awards

With 11 categories to choose from, business, or community/volunteer groups can gain public recognition for their environmental initiatives and management.

Further information is available at: <http://dec.wa.gov.au>.

Applications close 3 August 2007.

Funding Opportunities

If you would prefer to receive this newsletter in electronic format please let me know.

- **Lotterywest and the Gordon Reid Foundation** have ongoing grants available to community organisations involved in the Conservation of Western Australia's natural habitats and diversity. Find out more at <http://www.lotterywest.wa.gov.au/>.
- **Fosters Community Grants** support projects in all aspects of the natural environment. This round commences August 1st 2007. Find out more at <http://www.fosters.com.au/about/fosterscommunitygrants.htm>
- **ANZ Staff Foundation** funds small projects, up to \$5000, aimed at assisting communities to conserve resources and protect their environment. The current round of funding closes 15th July 2007. For more information visit <http://www.anz.com/aus/aboutanz/Community/Programs/StaffFound.asp>