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The Newsletter of the Western Australian Threatened Species & Communities Unit

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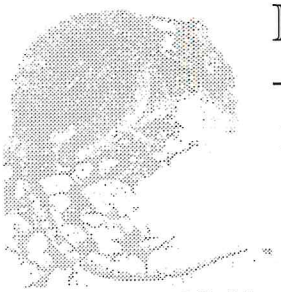
DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

NEW SCHEDULE OF THREATENED FAUNA



A new schedule of threatened and presumed extinct fauna was published in the Government Gazette on 28 November 1997. This follows the adoption by the Minister for the Environment of recommendations made by CALM's Threatened Species Scientific Committee (TSSC) earlier in 1997.

One notable species removed from the list is the Ngadji (or Western Pebble-mound Mouse) *Pseudomys chapmani*. TSSC was able to review a very comprehensive report on this species' conservation status prepared by Dr Tony Start, which compiled all available information, including that collected by Pilbara mining companies and their consultants over the past decade. Tony concluded that "*P. chapmani* is common and widespread in suitable habitat with an extent of occurrence of about 220,400 km^2. It has become extinct from about 35% of its historical range. However, the proportion of suitable habitat in those areas is much less than in the area in which it remains extant. Thus the decline in area of occupancy would be substantially less than 35%." Tony noted that the decline appears to be correlated with the distribution of foxes as well as feral herbivores and stock, and that there is no evidence of a decline in the last ten years, nor reason to expect a significant decline in the next ten years.

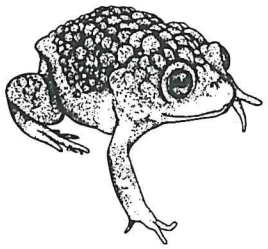
As well as the Ngadji, *Stygiocaris stylifera* (Spear-beaked Cave-Shrimp) was deleted as surveys have shown it to be more common than previously thought.

> "One notable species removed from the list is the Ngadji"

Species added to the list were the *Dasycercus hillieri* Ampurta (ranked Endangered), *Hyella* sp. nov. Camerons Cave Pseudoscorpion (ranked Critically Endangered) and *Stygiochiropus peculiaris* Camerons Cave Millipede (ranked Critically Endangered).

Two nomenclatural changes were also made: the Sunset (or Harlequin Frog) has now been named *Spicospina flammocaerulea*, and *Lasionectes* sp. is now *Lasionectes exleyi*.

Andrew Burbidge



INSIDE THIS ISSUE

ACTION FOR SPIDER NEAR EXTINCTION

A recent report to WATSCU by Drs Mark Harvey of the WA Museum and Barbara York Main of UWA's Zoology Department has confirmed the critically endangered status of a trapdoor spider from the Wheatbelt.

The trapdoor spider genus *Teyl* (family Nemesiidae) was first described by Barbara Main in 1975. There is evidence of an extensive radiation of the genus in the southern half of WA with numerous undescribed species. One undescribed species, known as *Teyl* species "C", the Minnivale Trapdoor Spider, is declared to be threatened under the WA Wildlife Conservation Act. The spiders are small to medium-sized, with a total body length (excluding legs and pedipalps) of 11 mm in males and 14 mm in females. The legs are long and thin, and the body segments are sparsely hairy. The general colour of the body and legs is dull, dusty tan.

Most species of *Teyl* have simple, open-holed burrows; however, several species, including the Minnivale Trapdoor Spider, build trapdoors - an adaptation against sheet flooding. *Teyl* species "C" digs a vertical burrow, closed at the surface with a door and with a side shaft also closed by a door. Both doors are made of compacted soil, are circular, flat on the 'outside', with the underside rounded and silk-covered. The surface door fits snugly into the vertical burrow opening, and when open, the hinged door lies flat ('upside down') on the ground. The side shaft door, when open, hangs downward from the horizontal hinge, into the main shaft of the burrow. The burrow is deep (the single excavated burrow was 33 cm deep) with a close-fitting plug-shaped lid, which is extremely difficult to observe when it is closed.

Teyl species "C" has been located at only two localities in the northern and central wheatbelt of WA – on Mellanbye Station north east of Gutha and near Minnivale. The former distribution of the species is thought to have been over a narrow band, roughly between Minnivale and Mellanbye in 'perched' swamps on high terrain. It probably did not extend far westward as another rare *Teyl* species occurs in wandoo country, while a third undescribed species occurs further to the east in salt lake country of the eastern wheatbelt and braided creeks of the Eastern Goldfields. Most of the presumed geographic range has been cleared for agricultural use.

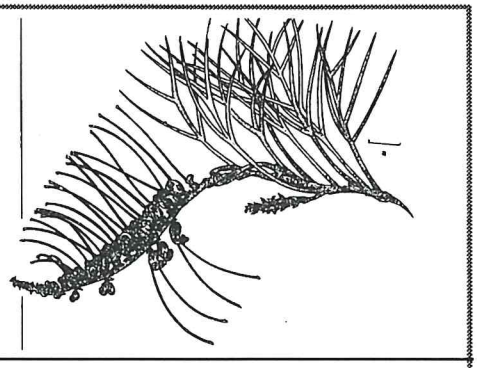
Only a single burrow is currently known to exist. It is about 6 m from the edge of a gravel pit. Additional mining for gravel could easily destroy this burrow and any others that may be present. Rabbit diggings could easily open burrows, leading to the death of the inhabitants.

In 1996, searches were made by the State's leading spider experts at a number of other localities within the species' presumed range, but these were unsuccessful.

Following receipt of the report, CALM has commenced the preparation of an Interim Recovery Plan and will take steps to protect the only known population.

Andrew Burbidge

Update on conservation of Western Australia's Critically Endangered Flora



Spreading Grevillea (*Grevillea humifusa*)

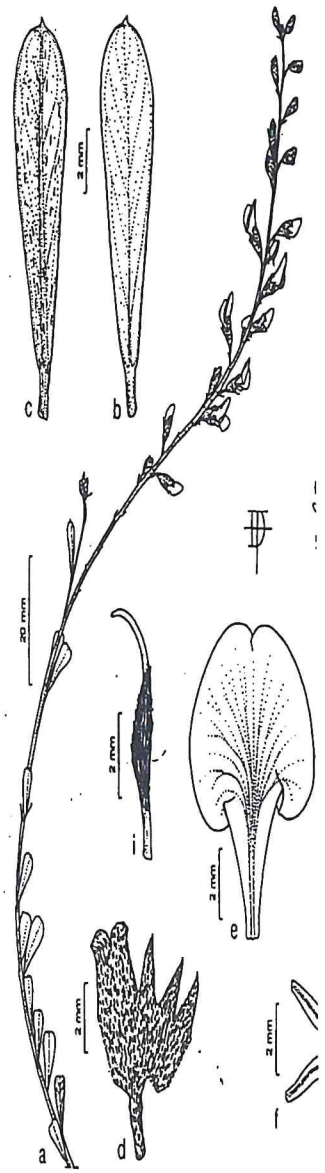
This spectacular ground hugging species has soft green-grey leaves and stunning bright red flowers. The only known occurrence of this species is on private property and was fenced recently. The population appears healthy and new plants have recently been seen. Unfortunately, searches undertaken this year did not locate any new populations.

Mountain Paper Heath (*Sphenotoma drummondii*)

This species hides away in cracks and crevices in rocky areas in the Stirling Range, producing striking bunches of white flowers in the spring. Records indicated that collections of this species had been made in the Walpole area, but despite numerous searches populations were not located, at least not until this year. On 13 and 14th of October 1997 an intensive survey for this species was undertaken by volunteers and CALM personnel from Walpole, Manjimup and Perth. Several granite outcrops in the Walpole area were searched whereupon a volunteer using binoculars had sighted a possible population. Abseiling down the rock was the only way to get to the area where the plants had been sighted and Carl Beck (CALM Ranger) bravely volunteered to undertake this arduous task. He located 18 plants in a crevice, all healthy, and several flowering. This population will continue to be monitored regularly and an Interim Recovery Plan has been drafted, which identifies threats to the species' survival and appropriate management actions.

Hinged Dragon Orchid (*Drakonorchis drakeoides*)

Fourteen, mostly small populations have been recorded for this Orchid. Many of these are threatened by grazing and rising salinity. Recent recovery actions that have been undertaken include the fencing of a population on private property (with the help of the owner) to prevent stock



trampling and grazing the delicate orchid and the introduction of a feral goat control program in a nature reserve where the species grows. The program will hopefully reduce the impact of goats trampling through the population and allow regeneration of the associated vegetation to occur.

Foote's Grevillea (*Grevillea calliantha*)

This *Grevillea* has unusually coloured reddish-purple flowers that are tucked underneath its distinctive beautiful weeping foliage. It is known from just six small populations in CALM's Moora District. Recently, the two largest were fenced to prevent trampling and grazing by kangaroos.

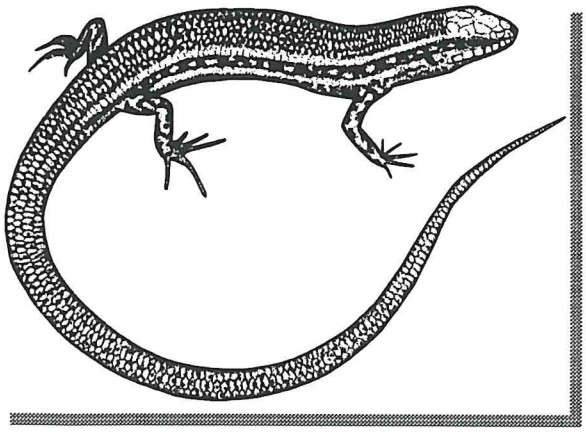
Prostrate Flame Flower (*Chorizema humile*)

An attractive prostrate plant, *Chorizema humile* is covered in bright yellow pea flowers in the late winter. Only three small populations are known in the Moora District. Recent negotiation with a landowner where the largest population occurs, has resulted in a fence being realigned to protect this delicate species from grazing and trampling by stock.

Colourful Snakebush (*Hemiandra* sp. Watheroo)

Although originally known from eight small populations in the Moora District Colourful Snakebush was, following surveys by CALM Botanists in 1995, found to have diminished to just 160 plants in a single locality. Fortunately, a recent (November 1997) survey trip to the Coorow area by Herbarium and WATSCU staff located a new population of the species. Approximately 20 plants, all healthy, were located. Negotiations with the landowner will hopefully result in the area being fenced soon.

Lancelin Island Skink



The following is an abstract from a paper which David Pearson of CALM's Science & Information Division, will be presenting to the Australian Society of Herpetologists meeting at Yungaburra Queenland in February 1998.

"When an idyllic sun-drenched island may not be enough: a recovery plan for the Lancelin Island Skink (*Ctenotus lancelini*)."

A small island with a wide sandy beach, a good surf break and exceptional windsurfing may seem like nirvana, but these qualities pose some threats to the conservation of the Lancelin Island Skink. In 1992, an apparent population decline of *C. lancelini* prompted research on its biology and management techniques to improve its conservation status, culminating in the preparation of a recovery plan in 1997. Results to date will be discussed. They indicate that the observed decline was an artefact of earlier collecting techniques, with the Island still possessing a large population occupying most available habitats. Searches for other populations resulted in the capture of only one individual on the adjacent mainland, as foretold in a local children's book.

Allozyme electrophoresis revealed the taxonomic distinctiveness of *C. lancelini* relative *to C. labillardieri* and identified the possible existence of a sibling taxon at coastal sites near Pinjarra and Meelup, 180 and 285 south of Lancelin Island. The impact on *Ctenotus* of a herbicide used to control weeds was examined. Finally, the results of a captive breeding program at Perth Zoo and visitor management planning to minimize habitat disturbance will be reported.

Search for Antina unsuccessful so far

The first mammal survey ever conducted of Western Australia's unique Cape Range region is underway. A team of researchers from the Department of Conservation and Land Management (CALM) recently conducted a two weeks search for threatened and other native mammals in the Cape Range region.

The search primarily focused on finding the Antina, commonly called the Central Rock-rat, a species never located alive in the State. The species was thought to be extinct until late 1996 when a few were located near Alice Springs in the Northern Territory. Skeletal remains of the Antina found in cave deposits in Cape Range prompted CALM to search the area for the elusive species.

The Antina is ranked as 'Critically Endangered' in WA and an Interim Recovery Plan prepared by CALM listed a search of Cape Range as the main course of action.

Although the search failed to locate any Antina, six other small native ground mammals were found in the area. These were the Little Red Antechinus, Fat-tailed Antechinus, Common Planigale, Pilbara Ningaui, Stripe-faced Dunnart and Sandy Inland Mouse. Cape Range is also home to a number of other mammal species including the Black-footed Rock-Wallaby, Euro, Echidna and several species of bat.

The search also highlighted the existence of two species of introduced rodents – the House Mouse and Black Rat. Unfortunately, the Black Rat appears to be well established in the Cape Range region, which is of concern as this species has displaced native rodents in parts of Australia.

A further mammal survey of Cape Range will be carried out by CALM in May 1998.

RECOVERY TEAMS FOR THREATENED ECOLOGICAL COMMUNITIES

by Val English

Four Recovery Teams have been established for communities identified as critically endangered in an initial two year project funded by Environment Australia. The communities that now have Recovery Teams are as follows;

- 'aquatic root mat community of caves of the Swan Coastal Plain',
- 'sedgelands in Holocene dune swales',
- 'thrombolites of Lake Richmond'; and
- 'montane thicket and heath of the eastern Stirling Range'

A Recovery Team for Toolibin Lake is already in place.

'Cave Team'

The team for this cave community first met in September 1997. The group consists of representatives from: the City of Wanneroo; staff from Yanchep National Park and CALM's Perth District; the Cave Advisory Group; Water and Rivers Commission; Water Corporation; CALM's Threatened Species and Communities Unit (WATSCU); Zoology Department - University of WA; and CALM's Softwood Plantations Group. CALM's Perth Acting District Manager, Alan Sands, chairs the meetings.

The cave community was initially described by Edyta Jasinska who has just completed a PhD through the Zoology Department at the University of WA. The community is only known from five caves, all of which are located in Yanchep National Park.

To support the root mat community, permanent streams need to occur in caves which are sufficiently warm, and shallow enough for tree roots to reach the water. The cave community is under threat from activities that affect the levels and quality of water in the Yanchep area. Water levels in the caves have declined considerably in recent years, probably mainly due to climate, but also associated with other factors.

The Recovery Team is drafting an Interim Recovery Plan for the community, and is initiating research and management actions to determine the catchments for the caves and hence accurately determining reasons for water drawdown in the caves, so that drawdown can be stopped and hopefully reversed.

'Dune Swale Team'

This Recovery Team consists of representatives from the City of Rockingham, a CALM botanist; representatives from WATSCU and Marine Branch (Chair); the Consultant to the developer of a major area that supports the community (Port Kennedy); a wetland biologist; a ranger working in the area where the community occurs; a conservation group; and a hydrologist from the Water and Rivers Commission.

The sedgeland community (identified in 'a floristic survey of the southern Swan Coastal Plain' by Gibson *et al.*, 1994) consists of a suite of native shrubs and herbs that occur in damplands in Holocene sands near the coast. The dunes where the community occurs vary in age from about 600 to 7,000 years.

Since the Recovery Team was set up in June 1996, it has nearly completed the Interim Recovery Plan (IRP) for the community. The major threats to the community are clearing and slashing of the vegetation; changing hydrology; disturbances such as recreational use; too frequent fire; and weed invasion. The IRP aims to achieve conservation management of examples of the community across its range and age sequence.

The team has worked to achieve recognition of the significance of the community, to establish greater understanding of

the extent and variation of the community, and to have examples of the sedgelands across all age sequences managed for conservation, including maintaining the hydrology where it occurs.

'Thrombolite Team'

This Recovery Team was formed in April 1997. The Team consists of a local conservation group; an expert on the biology of thrombolites; a wetland biologist; representatives from the City of Rockingham, WATSCU and CALM's Swan Region (Chair), the Water Corporation and Water and Rivers Commission. The consultant to a developer of the land adjacent to the lake and representatives from the Department of Environmental Protection have also been invited to attend specific meetings of the Recovery Team.

Thrombolites are structures built by a community of microbes. The structures are similar to the well known stromatolites at Shark Bay in external appearance but differ from stromatolites in internal structure.

Major threats to the thrombolites include: being crushed underfoot by lake visitors; nutrient enrichment of the lake, which may cause smothering algal blooms; altered patterns of groundwater flow due to water abstraction, clearing or urbanisation in the lake's catchment; and being smothered by sediment.

The draft IRP for the community notes that the thrombolites are likely to be extremely dependent on maintaining water levels and water quality in the lake. The team has therefore also been focussing on ensuring that planned developments adjacent to Lake Richmond are managed such that impacts to the lake can be minimised.

'Montane Team'

The existing Albany District Threatened Flora Recovery Team will be handling planning for and management of the recovery of the montane community in the eastern Stirlings. This team was officially established in June 1995 and its responsibility for the montane threatened ecological community was endorsed by CALM's Director of Nature Conservation in November 1997. The group consists of CALM's Regional Leader Nature Conservation South Coast Region as Chair, Albany District Conservation Flora Officer as Coordinator, local Albany district staff, a representative from WATSCU, Albany Wildflower Society and the Albany Shire Council, and local community representatives from Ongerup, Wellstead, Ravensthorpe, Bremer Bay and Hopetoun.

The community is only known from high altitudes between Ellen Peak and Coyanarup Peak in the eastern Stirlings. It consists of a suite of species (many of which are only found in the peaks of the Stirlings and are Declared Rare) mainly from the families Proteaceae, Epacridaceae and Myrtaceae. Many of these species are also particularly susceptible to dieback caused by *Phytophthora* species.

The Recovery Team has produced a draft Interim Recovery Plan which identifies dieback as caused by *Phytophthora* species in combination with too frequent fire as the major threats. Dieback was probably introduced over a period of many years as a result of walkers using the Ridge walk.

The community occurs in an extremely harsh environment and plant growth rates are very slow, so plants take a long time to reach maturity. In combination with deaths of juveniles from dieback, this results in a long period between fires to build up seed banks. Recent wildfires have therefore greatly impacted the community.

The Recovery Team has been monitoring the community, and treating areas with phosphite to help combat the disease. The phosphite is being applied broad scale in a fine mist from an aircraft. Future monitoring will determine the success of such treatments.

Symonanthus bancroftii, a new critically endangered flora species

by Greg durell

On a small water reserve near Bruce Rock, is one of the rarest plant species known to occur in CALM's Narrogin District. Recently re-discovered, *Symonanthus bancroftii,* named in honour of Dr. Joseph Bancroft (1836-94), a Brisbane pharmacologist, is classified in the same family as the potato, capsicum and petunia. It has been found again thanks to the help of a dedicated group of Bruce Rock residents, wildflower society members and CALM volunteers. It is one of only two members of the genus, both endemic to Western Australia. It's closest relative *S. aromaticus* occurs in the eastern wheatbelt and the goldfields. Both species have separate male and female plants are aromatic, emitting a tobacco like fragrance. This fragrance is exemplified especially when plant material has been dried for a period. *S. bancroftii* appears to be naturally rare, collected only eight times since 1922.

Since 1993 it has been searched extensively without success by Mr Robert Buehrig (now retired CALM Technical Officer) from Muntadgin to Broomehill. During many field trips into the area Rob has kept his eye out for this plant. One problem Rob encountered was vague past location information for all specimens previously collected. For instance, one sample collected in 1932 by Eric Bailey, a Bruce Rock local, was labelled " Bruce Rock". The other labels were all as vague. Rob's interest in geology caused him to theorise over possible locations and soil types that may be specific to this plant's needs. The lack of native vegetation remnants in the area made this task even harder. The species was upgraded to Declared Rare Flora in 1996 because no populations were discovered during the three years of survey.

Earlier in the year, under a joint CALM and Bruce Rock LCDC project, a small grant was successfully applied for from the Gordon Reid Foundation. This grant was used to assist in gathering past information on the plant, including the gathering of historical collection records, searching through past botanists' field note books, and making predictions of good sites to target future surveys.

An awareness of the plant was promoted through the radio, local newspapers and posters dispersed around the community. The next step was to entice local and CALM flora volunteers to a weekend in Bruce Rock to search during the main September flowering period. Approximately 30 people turned up for the Saturday and 15 for the Sunday.

Two weeks prior to the weekend search, Robyn Campbell, a Land Care Coordinator and amateur botanist, collected a piece of a "different looking" shrub on her way to a meeting at Bruce Rock. It was later confirmed to be *Symonanthus bancroftii.* This was first collection of the plant in 35 years, albeit only one female plant, with no known male plants anywhere to be seen. This find was particularly important because the main flowering period is now thought to be in early August. All past collections appear to be collected at the end of main flowering. This will greatly assist any future surveys.

The weekend search proved unsuccessful in locating any more of the *Symonanthus* however, it had additional benefits relating to the species long term conservation. Some of the benefits were;

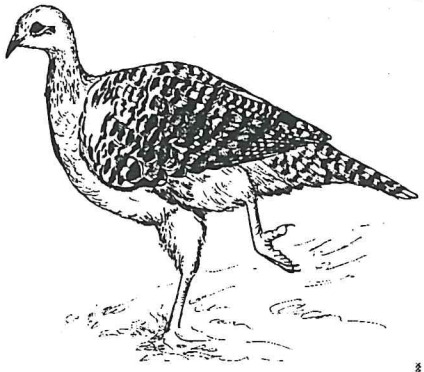
- the promotion of the plant. This increased its profile within the local community,
- providing a forum for people with similar interests to discuss conservation issues,
- to introduce people living outside Bruce Rock to local issues, and
- highlighting the need to continue to preserve for future generations our rare species and their habitats.

Now it has been found again the species has recently been listed as critically endangered. Already, recovery actions have been implemented. These are:

- the collection of material by Kings Park and Botanic Gardens for cryostorage and cutting propagation, and
- the erection of a barrier fence along a nearby roadside to prevent accidental vehicle damage.

An Interim Recovery Plan will soon be prepared. The plan will prescribe recovery actions for the single known plant and also have a strong emphasis on locating new populations, including a male plant for the lonely female.

TRANSLOCATIONS

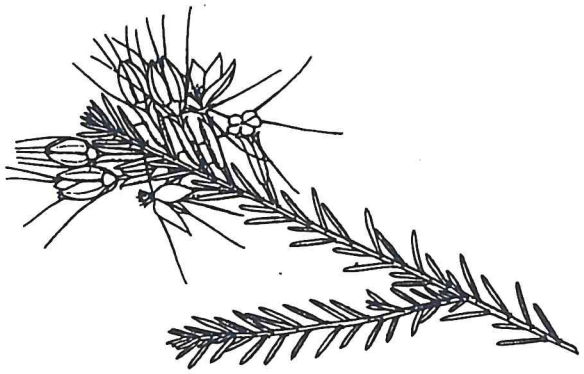


CALM's project 'Western Shield' includes control of CALM's Policy Statement No. 29 *Translocation of threatened flora and fauna*, lays down procedures for the review and approval of translocations. Proponents submit a Translocation Proposal (TP) to the Director of WATSCU, who arranges for it to be refereed by two scientists, who comment, among other things, on whether the proposed translocation is in accord with the Policy Statement and whether it is based on sound science. Referees' comments are forwarded to the proponent for consideration and amendment of the TP as necessary, and the revised TP, plus referees' comments, and a recommendation from WATSCU, is sent to the Director of Nature Conservation for his consideration and possible approval.

Two translocations of threatened species took place under the Western Shield banner this year - Noisy Scrub-bird and Malleefowl.

Species	Translocation	Proponent
Malleefowl	Collect eggs from sites in northern wheatbelt and Kalbarri/Shark Bay region, incubate them in Denham and release chicks in the Francois Peron National Park	Dr Colleen Sims and Brad Barton, CALM Denham
Ngadji (Western Pebble-mound Mouse)	Mining project east of Ophthalmia Range Ore Body(OB) 18(Mining Lease 244SA) to reconstructed mounds in rehabilitated areas of BHP's OB25 site	Mark Endersby, BHP Iron Ore
Ngadji (Western Pebble-mound Mouse)	Hamersley Iron's Yandi (HIY) Project in Pilbara to an area north of the HIY Deposit	JA Stoddart, Hamersley Iron Pty Ltd
Noisy Scrub-bird	Two Peoples Bay to Darling Range (between Murray River and Harvey Dam)	Alan Danks CALM
Scarlet Lechenaultia	Kings Park & Botanic Garden (from cuttings from Berry Brow Road) to Cullen Nature Reserve and Clackline/Spencers Brook Railway Reserve	David Mitchell, Les Robson, CALM and Kingsley Dixon, Kings Park & Botanic Garden
Trigwell's Rulingia	Kings park and Botanic Garden (from cuttings taken from single known population) to supplement existing population and establish new population at Trigwell NR	R Fitzgerald/ Kim Williams, Central Forest Region CALM
Western Ringtail Possum	East Busselton Primary School development site to Yalgorup NP (amendment to a previous Port Geographe to Yalgorup NP proposal)	Paul de Tores, CALM

New Publication



Interim Recovery Plans 4-16 for Western Australian Critically Endangered Plants and Animals was launched by the Minister for the Environment in August.

The following Interim Recovery Plans appear in this publication:

No. 4 Night Parrot (*Pezoporus occidentalis*)
No. 5 Antina (*Zyzomys pedunculatus*)
No. 6 Western Ground Parrot (*Pezoporus wallicus flaviventris)*
No. 7 Small Flowered Conostylis (*Conostylis micrantha*)
No. 8 Red Snakebush (*Hemiandra gardneri*)
No. 9 Dwarf Rock Wattle (*Acacia pygmaea*)
No. 10 Mogumber Bell (*Darwinia carnea)*
No. 11 Norseman Pea (*Daviesia microcarpa)*
No. 12 Kamballup Dryandra (*Dryandra ionthocarpa)*
No. 13 Stirling Range Dryandra (*Dryandra montana)*
No. 14 Metallic Flowered Eremophila (*Eremophila veneta* ms)
No. 15 Majestic Spider Orchid (*Caladenia winfieldii* ms)
No. 16 Swamp Starflower (*Calytrix breviseta* subsp. *breviseta*)

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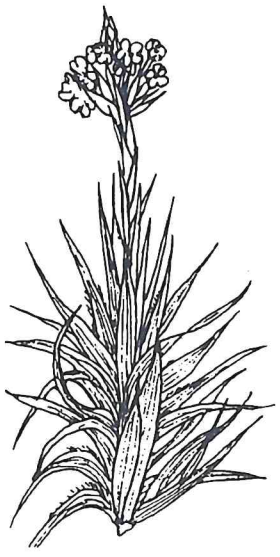

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