WATSNU

Department of Conservation and Land Management

The Newsletter of the Western Australian Threatened Species & Communities Unit

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Rediscovery of Gilbert's Potoroo

One of the best news stories of recent times was the rediscovery of Gilbert's Potoroo (*Potorous tridactylus gilberti*) by Elizabeth Sinclair and Adrian Wayne, students at the Zoology Department of The University of Western Australia. The first animal was captured in traps set for quokkas in the Mount Gardner area of Two Peoples bay Nature Reserve on 30 November 1994. Over the next few days a further four potoroos were captured.

The first specimens of Gilbert's Potoroo were collected by John Gilbert at "King George's Sound" in 1840. Further specimens were collected by George Masters in 1866 and 1869 between King George Sound and the Salt (Pallinup) River. Another collector, William Webb, obtained a single Gilbert's Potoroo, again from King George Sound, sometime between 1874 and 1879. That was the last time Gilbert's potoroo was officially recorded and it was relegated to the lamentable list of Australian animals that are presumed to be extinct.

Since the rediscovery CALM has prepared Interim Wildlife Management Guidelines for Gilbert's Potoroo and has commenced research into its conservation status. CALM has provided initial funding of $30 000 to implement the guidelines and has applied to the Australian Nature Conservation Agency for additional funds.

The Guidelines provide for research into distribution and ecology, captive breeding, and improved fox control at Two Peoples Bay. A Recovery Team has been set up and met for the first time in March. It is chaired by Kelly Gillen of CALM's South Coast Region, and its founding members are Andrew Burbidge (WATSCU), Alan Danks (Two Peoples Bay Nature Reserve), Elizabeth Sinclair (UWA Zoology), Vic Smith (veterinarian and local community representative) and Tony Start (CALM Science and Information Division).

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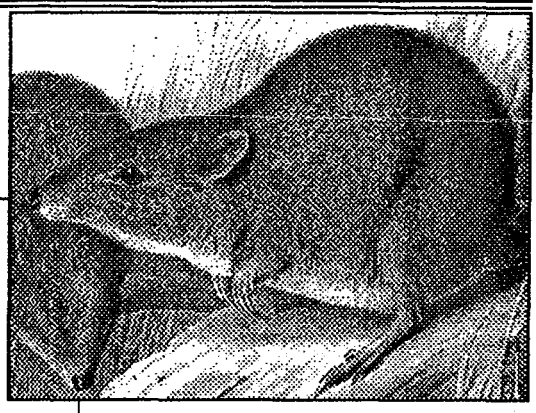

Gilbert's Potoroo

Tony Start is in charge of the research project and Andrew Burbidge is helping him. Adrian Wayne worked on the research project during January and February 1995. With the help of CALM staff, he set cage traps at three sites within Two Peoples Bay Nature Reserve, 1 to 2 km from the place where the original animals were caught. Unfortunately, he captured only a single potoroo for around 3500 trap-nights. (He did, however, catch six quokkas, a Western Ringtail Possum and some Quendas!) This very low capture rate lead us to decide to trial the use of hair tubes as a detection technique. Wes Manson is now working on the project and at the time of writing he has around 400 hair tubes set at different locations.

Hopefully, we will soon learn how to detect the presence of the potoroos without too much difficulty. This will allow survey of several sites near the south coast to find out if they occur outside Two Peoples Bay.

Andrew Burbidge

Threatened Ecological Communities

Project Update

The ANCA funded project to identify and conserve threatened ecological communities in the south west of Western Australia is progressing well. Definitions and categories of threat are based heavily on those used internationally for threatened species. These, and the criteria for allocating ecological communities to categories, are nearing the final stage following numerous drafts and discussions. Input on the drafts and general approach was sought from an advisory committee, consisting of people with expertise in a variety of community types, and from the attendees of a technical workshop. The workshop participants were from a wide range of backgrounds, and included environmental scientists from the mining industry, farmers, researchers from the four Western Australian universities, CSIRO and the WA Museum, environmental consultants, members of environmental groups and eight State Government agencies including CALM.

The consultant on the project (Val English) is now testing the application of the categories of threat and the criteria in the field on some well known ecological communities. An extensive survey of the southern swan coastal plain was recently undertaken by Neil Gibson, Bronwen Keighery, Greg Keighery, Allan Burbidge, Michael Lyons and numerous dedicated volunteers. Their detailed information is being used to identify some communities which will probably fit the highest level of threat. One community mentioned in their report that appears to be critically threatened is that of the southern ironstone heaths. All of the occurrences of it are very small, with none covering more than about 3 hectares and a number only covering about a quarter of a hectare. A number of the occurrences are surrounded by farmlands and weeds and have been burnt in the last 12-18 months.

Another community that may well fit the criteria of critical is a *Banksia attenuata* community over an extremely diverse dense heath. This is only known from 5 sites, two of which are system 6 areas. Two thirds of one of these system 6 areas has been "parkland cleared", with part of what remains being affected by dieback; and the other is gradually being cleared for use as a light industrial area and was burnt in a hot fire over the seemingly endless summer of 1994/1995. The most extensive occurrence of the community, along with half of a much smaller one are earmarked for housing in the not-too-distant future. This would leave a two hectare area surrounded by housing and weeds as possibly the best protected area of that community type!

All of the information collected on each occurrence is to be entered into a database especially designed for threatened ecological communities which is currently being written by another consultant (Simon Woodman). The next step would be to rank the communities in terms of urgency of conservation actions, including reservation. Communities that are allocated to the highest categories of threat would be expected to be in greatest need of urgent conservation actions. It is expected that CALM will undertake to ensure that interim management guidelines are produced within twelve months for any ecological community found to fit into the critically threatened category.

The whole approach to the identification and conservation of threatened ecological communities is informal and cooperative. The list is designed to alert landowners and managers to the presence of threatened communities and to the need for special care to ensure their survival. The production of interim management guidelines and recovery plans for identified threatened communities will be done in close consultation with all interested groups.

Val English

Lechenaultia laricina

Rare find in Porongurups

CALM's South Coast Administrative Assistant, Ann Burchell, recently made a significant discovery of a very rare West Australian wildflower, the Fine-leaved Apium *Apium prostratum* subsp. *phillipii* ms in the Porongurup National Park.

Ann located the new population of rare flora while exploring a little known area of the park for another of the State's rare flora species. The rare plants were found in a deep gully with steep sides and dense vegetation - an area which has apparently deterred all but a few intrepid explorers!

Ann discovered over 50 Fine-leaved Apiums during three surveys of the area with one giant specimen measuring nearly 4 metres in length!

Apium prostratum subsp. *phillipii* ms is an erect slender perennial herb to 50 cm high with finely divided leaves. It occurs on creeklines under karri and is restricted entirely to the Porongurup Range.

Ann's discovery has provided CALM with important new information concerning the species distribution within the park and just shows what rewards await the intrepid plant enthusiast!

Mike O'Donoghue

Recovery Team Reports for 1994

Annual Reports of Recovery Teams have been submitted to CALM's Corporate Executive and where Commonwealth funding is provided, to the Australian Nature Conservation Agency (ANCA). Summaries of these Reports are reproduced below:

Western Bristlebird

During 1994 a Recovery Team was formed and the Team has commenced implementation of the Research Plan. Existing and potential sites of occurrence were mapped east of Manypeaks to the eastern limit of distribution (Fitzgerald River National Park), resulting in increased knowledge of population boundaries and the discovery of several "new" locations. Two bristlebirds were caught and followed by radio-tracking at Two Peoples Bay Nature Reserve. Detailed vegetation mapping and sampling has been carried out in this area. Home-ranges were determined also by mapping singing birds in the same area. Little change has occurred since G. Smith's mapping of home-ranges during 1975-76. Several potential translocation sites were identified.

Central Forest Region Threatened Flora

The Central Forest Region Threatened Flora Recovery Team was established in early 1994. The team has changed membership recently due to the retirement of the Region's Botanist, Graham McCutcheon and because of Departmental restructuring. Following the team's restructure, work commenced on the review of the status of about 97 taxa in the Region. With the near future employment of a contract botanist and the collation of records and availability of accurate locality data recently made available the production of the management plan will be completed by the contract deadline.

Lancelin Island Skink

This report summarises work carried out during 1994 for the conservation of the Lancelin Island Skink, *Ctenotus lancelini*. The Lancelin Island Skink Recovery Team met for the first time in December 1993. A further two meetings were held during 1994. The Recovery Team, consisting of representatives from CALM, ANCA, WA Museum, Perth Zoo, Shire of Gingin, WA Society of Amateur Herpetologists and a consultant researcher, co-ordinated the implementation of Interim Wildlife Management Guidelines for the species. ANCA provided the majority of funds to carry out the required actions.

A field ecological study of *C. lancelini* by Barbara Jones commenced in November 1993 and continued throughout 1994. She found that *C. lancelini* was abundant on Lancelin Island and distributed across all major habitats, in contrast to recent survey findings. The difference in results reflects the emphasis on rock-turning by earlier workers, restricted activity periods of the skink, its cryptic habits, and the use of more appropriate trapping techniques. The skinks were found to be breeding on the Island despite dry conditions during 1993-4. Considerable data on the basic ecology of the species have now been obtained.

Preliminary results of the ecological study suggest that factors thought to have caused the apparent decline in *C. lancelini*, namely Silver Gulls and weed invasion, were not as important as previously believed. Silver Gulls were most abundant on the Island when the skinks were inactive and the skink's cryptic behaviour suggests predation by gulls would not occur, or be very rare. Habitat modification by nesting gulls does not appear to be a major disturbance on the Island at this time. The nesting activities of other seabirds are probably having a greater impact on vegetation composition and structure.

A survey of presumed suitable habitat on the mainland by CALM and the WA Society of Amateur Herpetologists, was successful in locating *C. lancelini* in a foreshore reserve at Lancelin, the first record of the taxon on the mainland. Ongoing survey along the stretch of coast from Lancelin to Ledge Point has failed to locate any further populations.

The captive breeding program has developed suitable techniques for the captive maintenance of *Ctenotus* skinks. Two eggs were produced during in December 1994 from the analogue species, *Ctenotus labillardieri*, used for the initial trials of this program. One was desiccated when found, but the other has been successfully incubated and hatched 35 days after laying.

Information on the Lancelin Island Skink and the actions being taken to improve its conservation status have been disseminated in the local printed press, popular magazines, in radio interviews and through talks to school groups in Lancelin.

Toolibin Lake

1994 has been an important year for Toolibin Lake. The completion and launch of a revised Recovery Plan have provided a more comprehensive basis for action, and substantial advances have been made in the design and implementation of important works.

The satisfactory resolution of long standing drainage issues within the Toolibin West Sub-catchment has been a significant achievement. This has included the implementation of major works with the support of all land managers involved.

Funding for a revegetation alley trial, revegetation under the oil mallee project, and progress with salinity management, particularly at the design level, have also been major achievements. The great value of the Recovery Team and Technical Advisory Group as forums for decision-making and developing inter-disciplinary action has again been apparent.

Southern Forest Region Threatened Flora

The Southern Forests Threatened Flora Recovery Team has been established. Work commenced on the review of the status of about 100 taxa in the Region. File information and Herbarium records have been collated for most taxa of interest and field work (relocation, revisit, collection and documentation) has commenced, with many new populations located for several of the taxa. Taxonomic problems are being addressed for a number of taxa, and, at least two new (apparently rare) species discovered. Formal descriptions are currently being prepared for both.

Wongan Triggerplant

The Recovery Plan for the Wongan Hills Triggerplant was made ready for submission to CALM Corporate Executive.

The Water Authority of Western Australia has completed its restructuring and has commissioned a report to assess its requirements for Water Reserve 16418. Negotiations will recommence after the completion of this report.

CALM has completed a rehabilitation plan for the gravel pit near population 5. Copies have been circulated to the Shire of Wongan-Ballidu and Main Roads WA. Implementation of the plan will be discussed at a meeting in February 1995. Rehabilitation operations will begin in April 1995.

Monitoring of the known populations found that most had experienced a decline in numbers. This is thought to relate to lengthening time since the last disturbance. Interestingly, however, spontaneous recruitment has been observed in two populations. This observation concurs with laboratory trials that suggest that disturbance is not essential for germination and that the seed may germinate after a period of ageing and weathering.

Monitoring of seed longevity has recorded no decline in the viability of seed stored at room temperature and tested at 8 and 16 months. Field trials have found that seeds respond positively to burning and smoking treatment. Laboratory trials are currently being undertaken into the effects of smoking but results are not yet available.

A rare and endangered flora garden was established in Apex Park, Wongan Hills with assistance from the Shire of Wongan-Ballidu, Kings Park and Botanic Garden, Main Road WA and CALM. The "Planting Ceremony" was attended by members of the Recovery Team, Shire Councillors and staff, representatives of the local Tidy Towns Committee and teachers and students from the Wongan Hills District High School who undertook most of the carefully supervised plantings. It was reported in the Central District Gazette.

Orange-bellied and White-bellied Frogs

Implementation of the Recovery Plan for the Orange-bellied (*Geocrinia vitellina*) and White-bellied (*G. alba*) Frogs has been proceeding for three years and through the efforts of the Recovery Team considerable progress has been made on a number actions identified in the plan.

Further surveys of the creeklines were undertaking in 1994 and resulted in six new populations of *G. alba* being discovered. Surveys for *G. vitellina* reinforced the very restricted distribution of this species with no new populations being recorded.

Significant gains to our understanding of the ecology and biology of these frogs were achieved during the year and the establishment of a captive breeding program may prove to be a useful tool in the future.

Recognition of the importance and fragility of the two frog species was received in CALM's Forest Management Strategy with an undertaking to defer all major land disturbance activities in the distribution area of the frogs pending further research.

The most significant achievement during 1994 was the commencement of the Conservation Fencing Program and the establishment of 6 km of fencing to protect the populations of *G. alba* on private property.

Continued expansion of the fencing program for *G. alba*, the development of an effective pig control program for *G. vitellina* sites and the establishment of a monitoring program within the fenced areas will be the major goals in 1995.

Thevenard Island Mouse

This report documents the first year of implementation of the Interim Wildlife Management Guidelines for the Thevenard Island Mouse (TIM). The population of *Leggadina* on Thevenard Island exhibits gigantism compared with mainland populations and the recent introduction of the House Mouse to the island was considered a threat to this population. The IWMG were prepared to ensure the conservation of this island population through five actions: 1) assessment of taxonomic status, 2) assessment of current population status of TIM and House Mouse on Thevenard Island, 3) translocation to another island, 4) development of techniques to control or eradicate the House Mouse, and 5) prepare a recovery plan if required. A Recovery Team was established to oversee the implementation of these actions and this met once during 1994. Good progress has been made on the taxonomic study and it is likely that the TIM warrants sub specific status. Assessment of population parameters has shown that numbers of both species fluctuate significantly, and that the TIM continues to persist in the presence of, at times, plague numbers of *Mus*. An assessment of Serrurier Island was made as a potential translocation site. Some investigation into the possibility of using murine herpes virus to sterilise *Mus* was also undertaken.

Western Swamp Tortoise

The past year has been a most significant one for the recovery of the Western Swamp Tortoise with the first release of captive-bred animals at Twin Swamps Nature Reserve. Monitoring of radio-tracked captive-bred tortoises has shown that they are surviving and behaving in a manner similar to wild animals. The release was made possible by the success of the captive breeding project at Perth Zoo, in cooperation with the Zoology

Department, The University of Western Australia. It was also made possible by the completion by CALM of a predator-proof fence around the reserve (paid for by the Australian Nature Conservation Agency' Feral Pests Program) and the supplementation from groundwater of swamps, provided as a sponsorship by the Western Australian Water Authority.

Implementation of the Recovery Plan is proceeding on schedule. A total of 35 tortoises, a record, were handled during 1994 at Ellen Brook Nature Reserve, some captures being due to the successful trialing of a new capture-technique. Thirteen of these were hatchlings. Six females and four males were radio-tracked at Ellen Brook NR until June 1994. In late 1993, 36 eggs were obtained from captive stock and nests from Ellen Brook Nature Reserve. From these, 30 hatchlings were produced; two of which were returned to EBNR, leaving 28 to be reared at the Zoo. In late 1994 a record number of eggs was produced; 47 eggs being obtained from 10 of 12 captive females. Thirty-nine were developing normally in December. The total number of Western Swamp Tortoises at Perth Zoo on 13 January 1995 was 112, consisting of 14 males, 12 females and 86 un-sexed juveniles.

A significant event was the finding of two resident adult female swamp tortoises inside the newly fenced Twin Swamps nature Reserve, where the population had been assumed to be extinct. Monitoring of invertebrates in swamps at Twin Swamps continued. Some effects of groundwater pumping at North West Swamp were observed.

Rose Mallee

Negotiations to acquire land at Watheroo supporting the largest pure stands of the Rose Mallee have been finalised, and the transfer of land to nature reserve status is in progress. Reservation of this area protects habitat that is not otherwise represented in conservation reserves, while allowing appropriate management and rehabilitation of the populations to occur.

In 1994 degraded sites in the "reserve" were planted with Rose Mallee seedlings and direct seeded with local species (eg. *Banksia, Calothamnus, Hakea* and *Grevillea* species) which support pollinators. The entire boundary of the reserve is being fenced to exclude rabbits and buffer vegetation has been planted in vulnerable areas.

At Three Springs, the landscaped gravel pit in one of the populations has been seeded with local species and is ready for the introduction of *Eucalyptus rhodantha* seedlings in 1995. RGC Mineral Sands Ltd. has continued to cooperate with the project by propagating seedlings and providing advice on weed control and rehabilitation techniques.

The Shire of Three Springs has adopted the Rose Mallee as their floral emblem and intends to plant this and other local rare species in the town gardens.

Shark Bay Mouse

This report documents the third year of implementation of the Shark Bay Mouse (SBM) recovery plan. Financial support continued from ANCA's Endangered Species Program and CALM. In kind support was received from Useless Loop Salt Pty Ltd. and Perth Zoo. During 1994, the recovery plan was revised to reflect the changes in the translocation program whereby the translocation to Doole Island was to be undertaken prior to the translocation to Heirisson Prong. The translocated population on Doole Island was monitored three times this year. While it was clear through track counts that SBM had persisted on the island, low capture rates made it difficult to assess the success of this program. The Bernier Island population was monitored twice and lower capture rates to previous years were found. After an earlier delay, the translocation to Heirisson Prong was undertaken in November utilising some wild caught and captive bred SBM. Initial monitoring showed very little mortality and that the SBM was establishing satisfactorily. Monitoring of the Bernier and Doole Islands, and Heirisson Prong populations will continue in 1995.

Woylie

This is the third annual report of the team implementing the recovery plan for woylies in South Australia and Western Australia. The team met twice. in July and in December 1994.

Two people have joined the team: Paul Brown from CALM's Swan Region (foreshadowed in the 1993 Annual Report to reflect the selection of Julimar as a translocation site) and Graham Liddelow (because of his long association with monitoring woylies at Perup). John Watson has retired from the team as there has been no confirmation of Woylies in South Coast Region of WA.

The team intends the status of the woylie be reviewed (as planned) in December 1995. However, in December 1994 the team concluded that the criterion of 20% trap success rate is probably unattainable at many sites even where woylies reach carrying capacity. It also recognises that some newly translocated populations may be well established but still be increasing by December 1995. Provided there is good evidence of an expanding population and adequate provision for monitoring and management beyond 1995, this should not delay the review. Criteria in the plan will need to be revised to reflect these factors.

In Western Australia, known woylie populations have thrived. Research is well under way at Kingston and at Batalling to examine the effects of various forest management practices so that prescriptions can be varied, if necessary, to allow recovery across all land tenure types. A consultant, Jackie Courtenay, was contracted to establish a monitoring program for all known Western Australia populations and to determine the extent of woylie distribution in the Kingston, Perup, Lake Muir area. She also collected blood for genetic analysis from populations not yet sampled.

Translocation to Julimar was postponed until January/February 1995. The new population will be intensively monitored as a major component of an Edith Cowan University post-doctoral fellowship study of the genetic consequences of translocations. The fellowship is held by Jackie Courtenay.

Preparation is nearly complete for translocations to a number of sites in the northern Jarrah/Wandoo forest in association with Operation Foxglove. The prey monitoring component of this operation is a project under the fox ecology program of the Cooperative Research Centre for bio control of vertebrate pests.

In South Australia a mixed, although generally positive, result in woylie population development was achieved. The small Baird Bay Island population, which was not considered viable in the long term, was lost to foxes which gained access to the island during an extreme low tide. It will not be replaced. An attempted introduction of new genetic stock to the Wedge Island population failed, probably due to a combination of strong competition for food and shelter from the large resident woylie population and severe weather in the week following release. More positively, the remaining island populations appear to be thriving, with increased capture rates recorded for all three. The Yookamurra population continues to be monitored by Sanctuary staff, with the help of SA Department of Environment and Natural Resources.

The Venus Bay reintroduction began in April, with 52 woylies from Dryandra having been released at two sites. Recapture data indicates increased body weights and successful reproduction. Whilst two of 34 radio collared woylies have been predated by foxes, the reintroduction is progressing well with an optimistic view for long term success.

Matchstick Banksia

Funding from the Commonwealth Government's Endangered Species Program continued during 1994, which allowed for implementation of recovery strategies for the long term protection of eleven populations of the Matchstick Banksia *(Banksia cuneata)*.

Funding for 1994 was allocated to the following actions

- Establish a Recovery team
  Completed.
- Acquire land for conservation of *B. cuneata*.
  Partially completed.
- Erect rabbit proof fencing on major populations
  Completed.
- Implement rabbit control pogrammes on all populations.
  Ongoing.
- Control salinity on populations at threat.
  Ongoing.
- Improve the habitat of populations.
  Ongoing.
- Collect seed for permanent storage and seedling planting.
  Completed.
- Monitor and survey populations.
  Ongoing.

In 1995 it is proposed to allocate funding to the following actions:

- Hold two Recovery team meetings.
- Continue with land acquisition.
- Erect rabbit netting at new population #11.
- Eradicate rabbits by 1080 trails , Phostoxin and warren destruction.
- Examine and implement planting of koala feed trees at Lazeaway # 8 to control rising ground water level at #8A.
- Enhance population #1 and #10. Carry out seedling planting of *B cuneata* and scrub species.
- Enhance populations #1, and population # 10 with seedlings.
- Place photograph in the Cuballing, Brookton and Quairading shire offices for public information.
- Monitoring and reporting. Assess recruitment or population decline all populations.
- Complete proposal for the establishment of *B. cuneata* plants within the Cuneata Park at Quairading.
- Establish seedlings at Stacey's property.
- Keep the public informed of progress of the plan through articles in newspapers and relevant newsletters.

Chuditch

This document reports on the third year of implementation of the chuditch recovery plan. Financial support continued from ANCA's Endangered Species Program, World Wide Fund for Nature (utilising a grant from Alcoa), and CALM. The revisions to the plan commenced in 1993 were finalised and satisfactory progress has been made on all actions. Studies into the impact of prescribed burning regimes and timber harvesting on chuditch and other threatened mammals commenced in the jarrah forest of south west WA. The completion of the research into the impact of fox control on chuditch enabled CALM to commence Operation Foxglove in May 1994 whereby 450 000 ha of jarrah forest will be regularly fox baited to enhance the conservation of fauna, including chuditch. Population monitoring continued at Mundaring, Batalling and Kingston. The captive breeding colony was maintained at the Perth Zoo. One litter of six was born in captivity, another six young were in the pouch of an injured female chuditch taken to the Zoo for treatment. Sixteen 1993 captive born young were released into Julimar Conservation park in May. Monitoring of the reintroduced population at Julimar continued and numbers appear to have stabilised in the monitoring area. Negotiations were completed with the Department of Defence about the use of the adjacent Bindoon Training Area for chuditch conservation.

Geraldton District Threatened Flora

This report covers progress made in the implementation of the Threatened Flora Management Plan for CALM's Geraldton District, (ANCA ESP Project Number 446) from January 1994 to January 1995.

Progress on the Management Plan is proceeding according to schedule. The main phase of information collation has been completed and the first year of fieldwork has been undertaken.

A Recovery Team has been formed, and three meetings have been held. Information for all taxa has been collated, and populations mapped. A field work schedule has been drawn up and commenced, some of the Poorly Known taxa already appear to be more common than our original information suggested. A total of 262 populations

have been inspected, of these 156 are newly discovered populations, and of those seven are newly discovered populations of Threatened Flora.

The number of taxa on the list for the District has increased since the beginning of the Project, from 155 to 267 taxa but this was expected to occur for this large District which has had relatively little botanical survey in the past and which is known to have a higher percentage of undescribed taxa in the List of Endangered, Vulnerable and Poorly Known Taxa than have those Districts nearer to centres of population in the south-west.

It has been concluded that in order to assess adequately the increased number of Threatened and Poorly Known taxa now known to occur in the District, it would be desirable to extend the work for a further year.

Wyalcatchem Foxglove

The following major actions were undertaken during 1994 as part of the implementation of the *Pityrodia scabra* Interim Management Guidelines:

- Interim Wildlife Management Guidelines were approved;
- Kings Park and Botanic Garden staff smoke-treated three plots where plants were previously recorded, to try and stimulate seed germination. Monitoring of the plots during the year failed to locate any *Pityrodia* seedlings;
- site inspection of the road verge scarified by Main Roads failed to locate any seedlings;
- a new, young plant was found in the vicinity of one of the other plants. This brings the current known number of wild plants to three. Propagation material was collected from this plant by King Park staff, and has been used to generate further breeding stock;
- monitoring of existing plants revealed that one of the plants showed signs of over-maturity and there was some doubt that it would survive the following summer;
- nature reserve 22176, 14 km from the known population, was inspected and found to contain suitable habitat for the establishment of *Pityrodia scabra*. A report was prepared recommending that the purpose of this reserve be amended to permit the establishment and management of a population of this species. The reserve purpose was amended to Conservation and Site for Re-establishing Native Plant Species;
- funding applications were prepared for the establishment/ enhancement of new populations of the species. Funds were obtained from the BankWest Landscope Conservation Visa Card for recovery work; and
- Kings Park and Botanic Garden have received funding to produce 50 plants for establishment in the wild at the existing site, and at reserve 22176. It is anticipated that planting will be able to occur during the winter of 1995.

Numbat

The Numbat (*Myrmecobius fasciatus*) is limited to two surviving populations (at Dryandra and Perup) and to a number of re-introduced populations in various stages of establishment. Re-introduction programs have relied mainly upon the Dryandra population. In 1993, after rising steadily since the introduction of a fox-control program, the numbat population at Dryandra dropped to about half of its 1992 size. The 1994 survey showed that the decline had slowed greatly and retrospective investigation raised several possible explanations including increased fox or cat predation, the pathological effects of a gut parasite, and a response to the numbat population outstripping the available resources. The Dryandra population will be monitored more closely during 1995 and alternative sources for animals for translocation will be examined. During 1994, translocations were carried out to Batalling, Tutanning and Karakamia, while monitoring of re-introduced numbat populations continued on those sites as well as at Karroun Hill and Boyagin Nature Reserves.

The Numbat Recovery Plan was completed and submitted to ANCA during 1994, and funding for its implementation has subsequently been approved.

Merredin District Threatened Flora

A pilot endangered flora database containing information on species, their populations and their management has been developed. After further restructuring the database should be completed in early 1995.

All Declared Rare Flora (DRF) have been ranked into the management priority classes Critical, Endangered, Vulnerable and Conservation Dependent using CALM's Policy 50, "Setting Priorities for the Conservation of Western Australia's Threatened Flora and Fauna."

An alternative method of ranking Priority taxa was adopted due to the lack of population information. This method is based on how recently the taxa were surveyed and the number of known populations. Taxa are ranked Very High, High, Moderate or Low. The ranking of all taxa were constantly reviewed with the receivership of new information.

Local Government Threatened Flora Information Kits were completed for 16 Shires The kits were distributed to 13 Shires and roadside marking of DRF was completed in eight Shires.

Canvassing of interested individuals and community groups resulted in the recruitment of seven new rare flora volunteers. Rare Flora information and support was distributed to a number of groups in the district.

A total of 118 surveys for DRF and Priority taxa were undertaken mainly in the western third of the district during the flowering season of 1994. Of these, 41 were for new populations. 19 were opportunistic and 58 were resurveys of old populations. Surveys were conducted on a variety of different land tenures. Volunteers participated in approximately 20 CALM-supervised surveys.

As a result of these surveys nine new populations of DRF, a Presumed Extinct taxon and two DRF taxa

previously presumed to be extinct in the Merredin District were discovered. These same surveys provided sufficient information to support recommendations to:

Downgrade the conservation status of 4 taxa (1 DRF, 3 Priority taxa) to a lower classification, and

Upgrade the conservation status of 1 taxon (1 Priority taxon).

The number of very highly ranked Priority species has been significantly reduced due to the discovery of 32 new populations.

Further recommendations to change the status of a number of taxa may occur early in 1995 upon receipt of verification of identifications by the Western Australian Herbarium.

Noisy Scrub-bird

In 1994 most of the actions specified in the Scrub-bird Recovery Plan were addressed. A new release site was selected at Torndirrup National Park and five males were released there. Female scrub-birds were added to the Mermaid area and additional females taken to Bald Island. A study of invertebrate abundance and availability in known scrub-bird habitat was begun and the radio-tracking project was continued. More blood samples were collected for a genetic assessment project.

All current release areas were monitored and the entire population of singing males was censussed. The total number of singing males reached 474 and the estimated number of individuals would be in the order of 1100. The population as a whole consisted of two large sub-populations (Mt Gardner and Mt Manypeaks), three small (Angove, Lakes and Mt Taylor) and three not yet beyond the release area stage (Bald Island, Mermaid and Stony Hill). Except for the Lakes area the trend was positive in all sub-populations and Mt Manypeaks showed a remarkable 43% increase over the previous year. Altogether scrub-birds occupied 4330 ha in the Albany area.

One disappointing note was the destruction of a large portion of the Mt Taylor sub-population and its habitat in a wildfire shortly after the 1995 New Year.

The final version of the Management Plan for Two Peoples Bay passed through both CALM's Corporate Executive and the National Parks and Nature Conservation Authority by the end of the year. It will be published shortly together with an updated version of the Scrub-bird Recovery Plan. Two Peoples Bay and the Scrub-bird Recovery Plan attracted considerable media attention during 1994.

The Annual Report for a WATSCU project on the - ***Preparation and initial implementation of Interim Wildlife Management Guidelines for 19 critically threatened Western Australian plant taxa*** prepared by Diana Papenfus follows:

Since the commencement of the project in July 1994 thirteen field surveys have been conducted to view all 19 taxa during their flowering periods. During these surveys nine new populations were discovered, consisting of single new populations for 7 taxa and 2 populations for one. However, apart from the possible exception of *Stylidium scabridum* and (following positive ID) *Hemiandra rutilans*, none of the finds were of sufficient size to warrant the downgrading of conservation status.

Four taxa have been identified as requiring urgent management actions. These are:

Grevillea mccutcheonii
(Busselton District)
One population,
3 plants.

Grevillea pythara
(Moora District)
One population
100 plants.

Verticordia albida
(Moora District)
Two populations
100+ plants

Brachysema papilio ms
(Busselton District)
One population
200 plants.

Flora Recovery Teams are currently established for all taxa except those found in the Albany and Moora Districts. The Albany Recovery Team will be set up in 1995 and the Geraldton Flora Recovery Team may in the future be expanded to encompass the rest of the Midwest Region, including the Moora District.

All available information on each taxon has been collected and collated from literature searches, CALM files and the Western Australian Herbarium data base. Agencies and other people involved with any of the taxa have been contacted to find out what they know and what they are doing, as well as familiarising them with the scope of the project.

Several meetings between Kings Park Botanic Garden staff, Diana Papenfus and Andrew Brown have occurred, resulting in Kings Park and Botanic Garden's commitment to the project and its pledge of support to biological research on several of the taxa, including maintaining ex-situ populations.

Many taxa involved in this project have received little research attention in the past. In the absence of specific information being available for the development of recovery plans Interim Wildlife Management Guidelines (IWMGs) as per CALM Policy No. 44 are being developed. Draft guidelines will be presented to the relevant CALM Regions, Wildlife Branch, relevant Science and Information staff and WATSCU for comment by March 1995. The amended versions will be presented for comment and final endorsement to the Director of Nature Conservation in June 1995.

Dibbler Research

Dibblers are back into the research spotlight, thanks to a recent long term project funded by ANCA. The scope of the project covers the examination of the distribution, conservation status and general ecology of the Dibbler (*Parantechinus apicalis*) a member of the Dasyurid family.
Field work has already begun on the island populations (Boullanger & Whitlock Is.) in Jurien Bay. Several years of research done there by Dr. Chris Dickman have given us a general understanding of the Dibbler, but much is still to be learned. This project aims to clarify the animals critical habitat needs both on the island and on the mainland.
By far the hardest task is to locate any mainland populations. With the help of local communities and CALM staff, an intensive trapping program is about to be launched concentrating initially on the south coast. It is hoped that Dibblers will be trapped within this year in the areas targeted. However, past efforts of this kind have gone unrewarded, but this does not mean that the animals are extinct on the mainland; they may just be in very low numbers, highly dispersed and very trap shy. This is not uncommon in other Dasyurid species.

For further information or any enquires can be directed to:
Natasha Baczocha
Dibbler Project Consultant, CALM Woodvale.

SLIDE INDEX - *update*

Greetings all! I am Gillian Stack, a volunteer with the Unit. As some of you may know I am now in the process of constructing a slide index of rare flora and fauna in order that a catalogue of all this State's threatened species exists in one location. This may later be expanded to include threatened communities.
Currently over 70% of rare flora species are represented in this index and more slides are being gathered to fill gaps. These have been contributed by many of the finest professionals in this State. I am now compiling the fauna section with the help of CALM Corporate Relations' slide collection with the bulk of these slides taken by Bert & Babs Wells, well known wildlife photographers.
Several "customers" have already availed themselves of our resource. The most recent was State Print, who used some of our slides for their final ever print run - an "Endangered Things" calendar.

Any of you who may need to borrow slides - please feel welcome! - Jill Pryde will, of course, be the one to see.

Gillian Stack

Albany District Threatened Flora Management Plan, implementation

A Threatened Flora Management Plan for the Albany District has been written and will soon be published. It is envisaged that copies will be available in May 1995. These can be obtained by contacting CALM on 334 0333.

With funding provided by the Australian Nature Conservation Agency (ANCA) an Assistant Conservation Officer has been appointed to implement the plan. Ellen Hickman was the successful applicant and will shortly commence an initial two year term. This may be extended to five years.

Ellen is a qualified botanist who has also made her mark as a skilled scientific illustrator. Ellen has been involved in conducting surveys along the south coast searching for threatened species of Restionaceae. She has also spent some time in the Shark Bay area searching for threatened eucalypt species and has done extensive flora surveys in the Mt Lesueur area. More recently Ellen has worked for Tony Friend and you may have seen her at the Woodvale Wildlife Research Centre.

We would like to take this opportunity to welcome Ellen to CALM and hope her stay is both rewarding and enjoyable.

Andrew Brown

Central Forest Region Threatened Flora Management Plan, writing

CALM is receiving $30 000 over two years to write threatened flora management plans for the Central and Southern Forest regions.

With the expert leadership of Roger Hearn the Southern Forest Region Plan is on schedule and should be completed by January 1996.

Roger, with the help of several knowledgeable and enthusiastic members of the Region's Threatened Flora Recovery Team, including volunteers Brenda Hammersley of Denmark and Bill Jackson of Walpole, has made some important new discoveries. New populations of threatened taxa have been found and presumed extinct species rediscovered (we will get Roger to document some of these in a future issue of *WATSNU*).

The writing of the Central Forest Region's Threatened Flora Management Plan was delayed for one year due to the ill health and subsequent retirement of the Region's expert, Graham McCutcheon (we are pleased to report that in 1995 Graham's health has improved greatly and he is now on contract to the Department; he is now once again able to get out into the bush to survey for rare plants).

Following Graham's retirement, the Region underwent a major restructure. Kim Williams was appointed as Program Leader, Nature Conservation and Scott Wood temporarily seconded to cover threatened flora. Scott is also the chair of the Region's threatened flora recovery team. In this capacity, Scott has been working extremely hard over the last few months to get the Region's threatened flora database up to scratch.

In order to ease Scott's workload, particularly in the writing of the flora management plan, $20 000 was sought from ANCA to employ a consultant for 10 months. I am pleased to report that CALM was successful in obtaining funding and in March 1995, following a successful tender, Carol McPherson of "Ecologica" started working on the plan. If you see Carol lurking around the bowels of the Herbarium, between the filing cabinets at Como or lost in the corridors at Woodvale would you please make her welcome.

Andrew Brown

Possible new population of the critically threatened plant *Brachysema modestum* ms

A new population of what is believed to be the declared rare flora species *Brachysema modestum* ms has been found in State Forest north-east of Nannup.

Brachysema modestum ms is an attractive sprawling plant with dark green oval leaves and unusual cream, pea-shaped flowers that are well hidden by the foliage. It was previously thought to be endemic to a small area of isolated ironstone outcropping south-east of Busselton.

Steve Pilkington of the Central Forest Region, whilst inspecting a pine coupe in the Harrington block of State Forest, recognised a plant growing along a rocky creekline as being the above critically threatened species. Steve brought it to the attention of Senior Operations Officer, Charlie Broadbent who subsequently showed the population to Andrew Brown (WATSCU) and Diana Papenfus (Diana is writing IWMGs for 19 critically threatened species, including *Brachysema modestum* ms).

Specimens have been collected and will be sent to Mike Crisp at the Australian National University for confirmation. If they are determined as being *Brachysema modestum* ms this will double the number of known populations (just one was known previously) and significantly reduce its threatened status.

Andrew Brown

Hemiandra rutilans

New populations of *Stylidium scabridum* and *Hemiandra rutilans*?

Les Robson, SWAN Region's Conservation Officer, has found new populations of two critically threatened plant species, *Stylidium scabridum* and *Hemiandra rutilans* in an area of State Forest within Wandoo Conservation Park.

Stylidium scabridum was known from just two small populations in the Wheatbelt and Moora Districts and was believed to be one of our most critically threatened plant species.

Les was quick to point out that the discovery of these plants was very much a team effort. Dave Coates had organized a field excusion with specialist staff from Swan Region to familiarise them with the Stylidium's botanical features. Sue Patrick had mentioned to Les that there had been a record of this plant growing in association with another of the State's rare flora species, *Verrauxia verrauxii*. Les was familiar with the rare *Verrauxia* having discovered 23 new populations in 1994. Armed with detailed information about the characteristics of the plant and its preferred habitat, Les set about to search the area of State forest which he knew contained populations of *Verraudix verrauxii*. To his surprise he came across a substantial new population of *Stylidium scabridum*.

Stylidium scabridum is a beautiful white to pale pink flowered trigger plant that grows in small groups in open sandy clearings in mixed jarrah-wandoo woodland. The new populations are substantial in size and significantly reduce the species' threatened status.

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Data Directory Report

The first "edition" of the WATSCU Data Directory is nearly ready to be distributed by diskettes, which will use PARADOX 3.5 software.

The Directory contains information relating to 284 gazetted Threatened and Reserve List fauna and 331 Declared Rare Flora. (The inclusion of Priority Flora will have to wait until the second edition.)

Most work has been done on bibliographic references for the species. The bulk of the reference file has been copied from Mike Lyons and Neil Gibson's *Bibliography of Location -based biological studies in W.A.*, which has been published as Supplement One of *CALM Science*. 1766 of the 2333 entries were used and over 600 new entries made from the Wildlife Science Library's catalogue. A further 50 entries are being added from Deakin University's *Threatened Species in Australia* bibliography on diskette.

365 coloured slides (of which 255 are photos of plants) are noted in the Directory and negotiations are progressing to add many more slides of animals.

The names, addresses, phone and fax numbers of 57 fauna experts have been included and the information on flora experts will be added for the first edition. To date, only the 2766 relevant departmental (Como) files have been listed, as the response to my circular of last August has been almost negligible. Status information has been included for gazetted species and for ANZECC and Action Plan rankings. W.A. rankings will be added as soon as they are determined by the Scientific Ranking Panel.

Program interlinks for species and references exist to provide screen and print reports but refinements are needed to interlink the species with files, slides and experts.

Hugh Clift

ACTION PLAN - MARSUPIALS and MONOTREMES *UPDATE*

WATSCU welcomes ***Stephanie Maxwell*** to Western Australia.

Stephanie comes to us from Canberra to work as a consultant on the re-writing of the *Action Plan for Australian Marsupials and Monotremes: revision.*

CALM is carrying out this work on behalf of the IUCN Species Survival Commission's Australiasian Marsupial and Monotreme Specialist Group.

The project will be supervised by Andrew Burbidge (Chair, AMMSG) and Keith Morris (Secretary, AMMSG), and is funded by the Australian Nature Conservation Agency (ANCA) and World Wide Fund for Nature Australia.

The Action Plan will be published by ANCA in 1996.

Stephanie will be working part time on this project. She will also be working on a WWF community involvement project promoting Chuditch conservation. This project aims to assist and promote community awareness and participation in the conservation of the Chuditch.

Stephanie can be contacted at Woodvale Wildlife Research Centre on 405 5105

WATSCU Personalities - Hugh Clift

Continuing our segment on who's who in WATSCU. Hugh is the Executive Officer of WATSCU dealing with the finances and the chief curator of our database.

Hugh became a conservationist and nature lover the easy way. He was brought up on a half-acre suburban Wellington (NZ) property dominated by a native garden and he was fortunate to have as a Scoutmaster a gentleman who favoured the outdoor life and bush camping. Consequently, he has many fond memories of and reverence for "the great outdoors".

One of the many camps he was privileged to enjoy was located at Kapiti Island, by far the greater part of which is a bird sanctuary.

Of the many interests encouraged by his father, the most interesting (for Hugh) was history, in which he majored for his B.A. from the University of New Zealand and gained an M.A. Honours from Victoria University. After a year at the Department of Civil Aviation he transferred to the New Zealand National Library, completed a year's post-graduate study for the Diploma of the New Zealand Library School and then worked as a reference librarian in the General Assembly (Parliamentary) Library until he left for Australia in 1967.

For two years he was the Librarian of the Architecture and Town Planning Faculty Library at the University of Melbourne and then became Acting Reference Librarian at the Reid Library, UWA, where he met the lady who was to become his wife. There was, however, a complication to the marriage; his wife happened to be the Chief Cataloguer of the Library and in those distant discriminatory days the UWA's policy was to prevent married couples from working in the same department. Therefore, Hugh was given notice and became the head of the Technical Colleges Section of Library Services Branch in the Education Department, a position he held for nearly 17 years until the Section was abolished and he was redeployed to CALM.

As Senior Librarian Hugh was instrumental in re-establishing the Forestry Library at Como - just in time for it to be become a discrete entity when the CALM Library was split in three. Shortly before that Hugh had asked for a transfer; the loss of a third of the Library's budget and the prospect of further losses prompted the request and Hugh regards it as an outstandingly happy coincidence that Andrew Burbidge was about to set up WATSCU and needed an Executive Officer for the Unit.

Having had Andrew for a boss when he first came to work at the CALM Library at Woodvale, Hugh didn't need to be asked twice if he would like to work for Andrew - and he has never looked back since.

Hugh's interests include history, theology, theoretical physics, cosmology, astronomy, natural history, classical music, bridge, chess, reading, writing, gardening, bushwalking and sport. It's twenty years since he last played hockey but in 1963 he played ***against*** Australia. Other previous sporting passions were cricket and tennis and he shares with the other sports of WATSCU a lively interest in table tennis.

Red-tailed Black Cockatoo

New populations of *Stylidium scabridum* and *Hemiandra rutilans*?

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Hemiandra rutilans was thought to have become extinct following the death of the single known plant at Dowerin in 1993.

It is an extremely attractive red, pink or yellow flowered ground hugging plant that flowers during the summer months when the surrounding bushland is parched dry.

Les has found a large number of plants growing in the same area as *Stylidium scabridum*. These will have to be checked in order to determine that they are indeed the same species. If they turn out to be *Hemiandra rutilans* it will be a remarkable turnaround from a presumed extinct species to a species that is geographically rare but locally common.

More recently an expedition to an area known as Sand Springs near York (believed to be the same Sand Springs from which the species was originally collected) has found another population of this species

Mike O'Donoghue & Andrew Brown

Threatened Species & Communities Display at Wagin

One of Western Australia's largest and most successful country shows is the annual Wagin Woolerama, which this year was held on Friday the 10th and Saturday the 11th of March.

The Department of Agriculture made a major feature at this year's Woolerama of the need to protect remnant vegetation throughout the wheatbelt and asked a number of CALM groups to provide displays. The Vegetation and Tree Planting Advisory Service had a separate display on the mallee oil project and its significance as a profitable way to achieve landcare objectives.

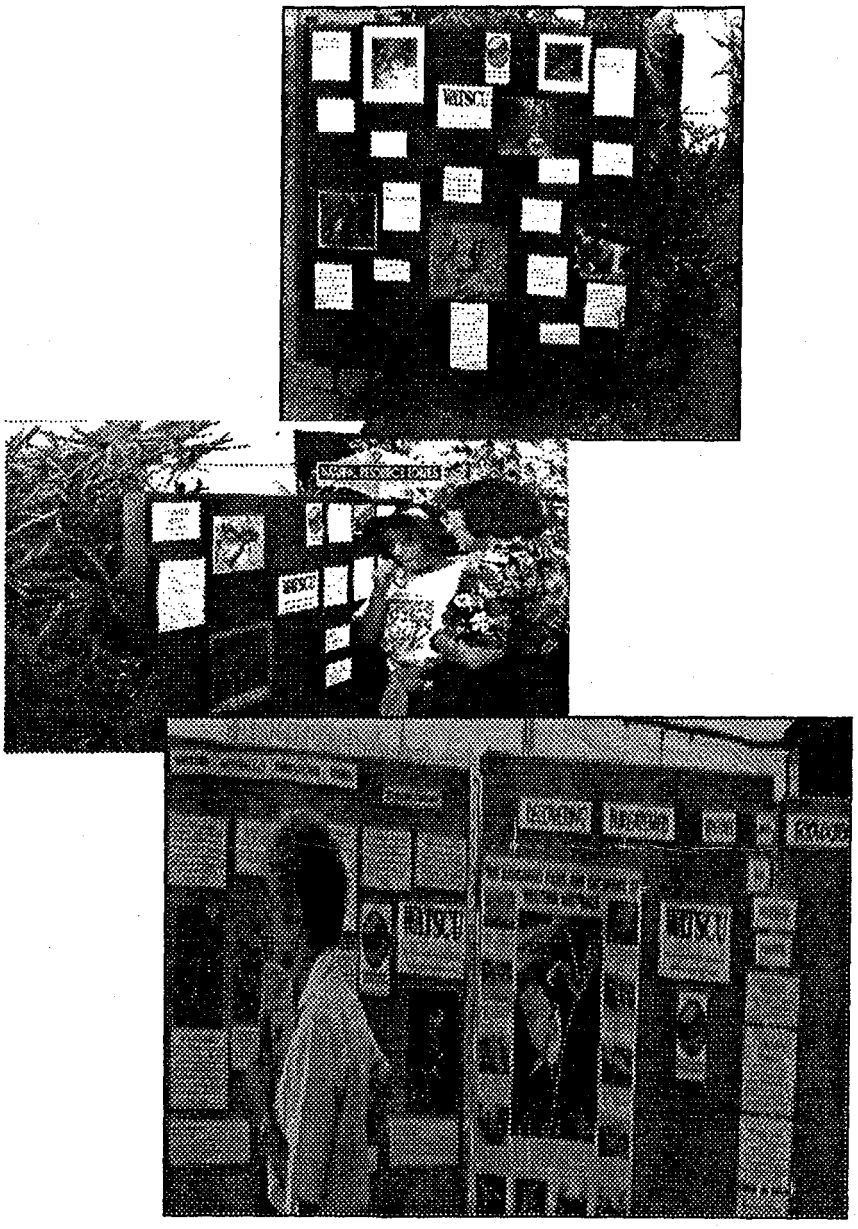
WATSCU used the opportunity to complete a long-intended display on the recovery process. This display used examples of wheatbelt species and ecological communities to illustrate the ways recovery planning is applied in Western Australia. It stressed how fundamental the involvement and cooperation of local communities, especially private landholders, are to conserving threatened species and ecological communities.

The WASTCU display was produced remarkably rapidly, with the assistance of several research scientists and the direct involvement of all seven current members of the Unit! It was taken to Wagin and erected, along with a complex and imaginative display on roadside conservation, by David Lamont of the Roadside Conservation Committee. WATSCU thanks David and all others involved for their help.

The overall result of the many different displays, all on overlapping and complementary aspects of conservation in agricultural areas, was very effective. It helped to reinforce strongly the message that ***good landcare, farm economics and nature conservation are inseparable in seeking to achieve efficient and sustainable management of lands and waters.***

The threatened species and communities display can be adapted for specific places or themes. We are keen to incorporate this sort of material into other multi-disciplinary displays like that at Wagin and would be pleased to hear of any opportunities for cooperation on such activities.

John Blyth



Photos taken by David Lamont of the WATSCU display at the Woolerama Expo

NEW RECOVERY PLAN PUBLISHED

Wildlife Management Program No 13

Chuditch Recovery Plan

by Peter Orell and Keith Morris for the Chuditch Recovery Team has recently been published by CALM

WATSNU

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