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Species and Communities Branch newsletter for Threatened Species and Ecological Communities conservation
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WANOSCG, DEC and Back from the Brink join forces in an effort to relocate the sun star orchid in Lesueur National Park

by Benson Todd

Orchid enthusiasts converged in Lesueur National Park in October to search for the endangered sun star orchid (*Thelymitra stellata*). Members of the West Australian Native Orchid Study and Conservation Group (WANOSCG) volunteered their time and joined forces with Department of Environment and Conservation (DEC) staff to search for the rare orchid. The survey took place over a weekend and was initiated under the DEC-managed Back from the Brink Project, funded by the Federal and State governments and administered by the Northern Agricultural Catchment Council.

The sun star orchid is known to occur from Three Springs to Pinjarra, but is only known from a few populations, most with low numbers. The species has been recorded in Lesueur National Park over several years, with some records dating back to the mid 1980s. However, most populations have not been seen since their initial discovery.

Flora Conservation Officer Benson Todd said: "Having up-to-date information about the location and condition of our threatened flora populations is an integral part in ensuring their conservation, and this recent survey was all about gathering the information required."

Left Sun star orchid (*Thelymitra stellata*). Photo – Benson Todd

Above The survey team, WANOSCG members and DEC staff. Photo – DEC

The group spent the weekend surveying areas where the sun star orchid had been recorded in the past, as well as other areas of suitable habitat, in an effort to locate new populations. In total, three of the historical populations were identified, consisting of 34 individuals. Information about the location, habitat, condition and reproductive status of the populations was collected along with photographic records of the plants.

"The combined knowledge the group holds about orchids is quite amazing and, along with their well-trained eyes, was crucial in locating the populations," Mr Todd said.

In all, more than 400 volunteer hours were spent surveying Lesueur National Park over the weekend. The group also enjoyed some of the spectacular scenery and diverse plant communities the park has to offer, as well as some of the less desirable aspects such as ticks and flies!

The survey was considered a great success and the information gathered will be integral in bringing the sun star orchid back from the brink of extinction.

For more information contact Benson Todd on (08) 9652 1911 or email benson.todd@dec.wa.gov.au

Inside this issue

Weeds, fire and restoration possibilities: the seasonal clay-based wetlands of Meelon Nature Reserve

by Kate Brown, Grazyna Paczkowska, Bob Huston and Nola Withnell

The plant communities of the seasonal clay-based wetlands of south-west Australia are among the most threatened in Western Australia. More than 90 per cent has been cleared for agriculture and urban development with weed invasion a major threat to those that remain. *Watsonia meriana* var. *bulbillifera* is particularly invasive within these communities, forming dense stands that displace the herbaceous understorey. Significantly, more than 50 per cent of the flora of clay-based wetlands are annual and perennial herbs and include many rare or restricted taxa.

Meelon Nature Reserve, a remnant clay-based wetland on the Pinjarra Plain about 80 kilometres south of Perth, has been the focus of a three-year study investigating the effectiveness of the herbicide 2-2DPA (Dalapon®, Propon®) in controlling populations of *W. meriana* var. *bulbillifera*. The study also examined the impacts of the herbicide on native flora, the response of the native plant community to *W. meriana* var. *bulbillifera* removal and the compounding impacts of fire.

In the first year of the control program, a 97 per cent reduction in the cover of *W. meriana* var. *bulbillifera* was recorded and importantly there was little off-target herbicide damage to native flora. Eighteen months after the initial herbicide treatment an unplanned wildfire burnt through the reserve triggering regeneration of a wide range of native species across the treatment area. With no seedling recruitment of *W. meriana* var. *bulbillifera* back into the site, these initial results are promising for management of *W. meriana* var. *bulbillifera* invasions in these clay-based wetlands. The indications are that, once *W. meriana* var. *bulbillifera* is removed, the communities have the capacity to regenerate, with fire potentially playing a role in the regeneration process.

The study has been a collective effort involving staff from the Urban Nature Program, DEC's Perth Hills District and the local community, with funding support from DEC's Species and Communities Branch. In September 2007, a workshop and field day were run in conjunction with the Waroona Land Care Centre for landholders in the Dwellingup community. The day provided the opportunity to share the results of the work and to provide advice to local landholders, many of whom are closely involved in the management of threatened communities.

Above *Tribonanthes australis* was more frequent along monitoring transects after the fire.

Below from left *Watsonia meriana* subsp. *bulbillifera* in Transect 2 before treatment with Dalapon, September 2005; *Watsonia meriana* subsp. *bulbillifera* in Transect 2 following fire, February 2007; Regeneration along Transect 2 triggered by February 2007 fire.

Photos – Kate Brown

For more information please contact Kate Brown on (08) 9423 2905 or email kate.brown@dec.wa.gov.au

Muchea Limestone site known as 'Carousel Swamp' on Western Power land. The area has had significant resource investment from Western Power and DEC's Swan Coastal District who work in partnership to manage the site. Feather flowers (*Verticordia* sp.) in the foreground with swish bush (*Viminaria juncea*) behind. Photo – Jill Pryde

Review of Western Australian recovery plans

by Vanessa Clarke

DEC's Species and Communities Branch is reviewing recovery plans for three Western Australian threatened ecological communities (TECs). The plans were adopted as national recovery plans, under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) for the Commonwealth Government. The reviews are for the TECs known as 'Shrublands and Woodlands on Muchea Limestone', '*Eucalyptus calophylla–Kingia australis* woodlands on heavy soils', and '*Eucalyptus calophylla–Xanthorrhoea preissii* woodlands and shrublands'.

In reviewing each recovery plan, the project officer consulted with all relevant stakeholders with a particular interest or expertise in the TECs, including those responsible for implementing recovery actions. The reviews are intended to assess whether the overall objectives have been met, the extent to which specific objectives and recovery actions have been completed, and their contribution to achieving the overall objective. An assessment was also made as to whether funds spent have been commensurate with actions implemented, if implementation was proportionate to expenditure, and the reasons for these outcomes. The reviews will be used as a basis for deciding whether changes should be made to the recovery plan, if a new recovery plan should be prepared, or if a recovery plan is no longer required.

The results of the review indicate that, overall, the plans for each TEC have been successful in achieving the broad objectives of the plan, which is: "*To maintain or improve the overall condition of the plant community in the known locations and reduce the severity of threat, with the aim of reclassifying it from critically endangered to endangered.*" Furthermore, the 'criteria for success' in each plan were met.

On the whole, allowing for the level of investment, the highest priority actions have generally been well implemented and a number of the critical threatening processes have been abated or reduced for each TEC. Additionally, stakeholders have in most cases been highly supportive of conservation outcomes for TEC occurrences. One of the most significant factors has been the financial investment and, in some cases, in-kind resources from all stakeholders including DEC, WA Planning Commission, Natural Heritage Trust, previous Commonwealth funds for conservation, NHT funds gained through Natural Resource Management groups, and resources from private land managers. Calculations indicate that a total of $3,044,593 has been spent on '*Eucalyptus calophylla–Xanthorrhoea preissii* woodlands and shrublands', $1,135,250 on '*Eucalyptus calophylla–Kingia australis* woodlands on heavy soils' and approximately $2,500,000 on 'Shrublands and Woodlands on Muchea Limestone'. These resources have resulted in a significant increase in the area and number of TEC occurrences now managed for conservation and have consequently greatly improved the future outlook for these communities.

For more information contact Vanessa Clarke on (08) 9334 0330 or email vanessa.clarke@dec.wa.gov.au

Another TEC site purchased

by Alex Errington and Jill Pryde

DEC's most recent land purchase in its South West Region contains two threatened ecological communities (TECs).

In 2006, a former regional ecologist for the South West Region discovered that a 6.4-hectare site in Stratham (approximately 10 kilometres north of Capel) contained two TECs. This was determined after contacting the owner of the site, conducting a survey of 'extent and condition' and installing quadrats.

One of these TECs represents the driest of the threatened marri communities on heavy soils on the Swan Coastal Plain—'*Eucalyptus calophylla–Xanthorrhoea preissii* woodlands and shrubland'. It is listed as critically endangered. This community is dominated by marri over *Xanthorrhoeas*, shrubs, sedges and herbs. The extent of the community as a whole is believed to have been reduced by more than 90 per cent since European settlement and only five per cent of the remaining 93 hectares are held within conservation reserves. The major threats to the TEC are weeds and hydrological change.

The second community represented at this important site occurs in low lying flats with a clay layer that allows for seasonal freshwater inundation. The '*Herb rich shrublands in clay pans*' are listed as vulnerable. The community is usually dominated by *Viminaria juncea* with *Melaleuca* species over a suite of herbs. Historically the total area of this community type has also suffered serious decline since European settlement, with only about 15 per cent of the remaining 143 hectares being in conservation reserves.

The owner of the property containing the two TECs was contacted and expressed a willingness to sell the parcel of land. The property was subsequently listed as a high priority for purchase. After negotiation with the owner and eventually formal subdivision of the property, the parcel was acquired on behalf of the State. Action is now under way to have the area created as a new nature reserve.

This will provide a small but significant addition of bushland in excellent condition to the conservation reserve system, thereby improving the prospects for these communities in the long term. Future recovery actions include monitoring and seeking funds to fence the reserve.

For more information contact Jill Pryde on (08) 9334 0263 or email jill.pryde@dec.wa.gov.au

2007 Fauna Management Course

by Amrit Kendrick, Peter Orell and Christine Freegard

From 5 to 9 November 2007 participants from DEC and one from the Australian Wildlife Conservancy gathered at Perup Forest in DEC's Warren Region for the Fauna Management Course. Participants selected to attend the course have roles that require them to work with fauna. Facilitators from DEC's Species and Communities Branch and Science Division, a WA Museum curator and a Recovery Catchment facilitator ran the five-day program.

A primary element of the course is to understand the legislative and policy framework governing fauna management and conservation in Western Australia. Before participants attend the course they study aspects of the relevant acts and regulations, including the *Wildlife Conservation Act 1950* and the *Animal Welfare Act 2002*. DEC's responsibilities for fauna are introduced to participants through various policy statements and key documents.

At the course, the participants learn about:

- the processes of determining conservation priorities
- recovery planning
- environmental disturbances and fauna response
- basic biology and management requirements of fauna
- the principles of developing fauna management plans
- interacting with the public and media on fauna issues.

The course provides an opportunity to learn about planning and undertaking fauna surveys and gaining handling and trapping experience with a range of animals. The experience of setting and checking traps and collecting and putting away traps is a foundation of the course. This year, brushtail possums (*Trichosurus vulpecular*), Rosenberg's monitors (*Varanus rosenbergi*), bobtails (*Tiliqua rugosa rugosa*), woylies (*Bettongia penicillata ogilby*), chuditch (*Dasyurus geoffroii*), a dunnart (*Sminthopsis longicaudata*) and one blind snake were caught and released. Invertebrates examined included centipedes, ants, crickets, earwigs and various arachnids, including trapdoor spiders. A range of birds was observed in daylight and at night.

DEC officers find a chilly Rosenberg's monitor (*Varanus rosenbergi*) in the traps one early morning at Perup. Photo – Amrit Kendrick

Data collection is another important element of the trapping procedures. Each participant gains experience with scribing and measuring. Depending on whether it is a possum or a lizard, body weight, head, feet and tail are measured and recorded along with other observations. Participants also learn how the collected data is stored, managed and analysed to provide information such as changes in abundance of various species at the survey sites.

One session demanded that participants use their forensic detective skills to discover what had killed a wallaby, and to use radio telemetry to find the radio tracking collars from four different marsupials. Each day is full from sun up, and some go past sun down as spotlighting, owl calling and frog call surveys are also conducted.

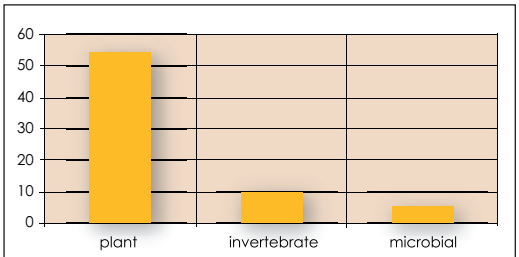
This course is a unique opportunity for participants. Presenters' expertise enriches the experience as they share information about the life histories and behaviours of the animals which they have observed for many years. In a single afternoon, participants learn how to handle a bush rat, how many eggs a gecko lays and what birds have nearly disappeared from the Swan Coastal Plain.

For more information please contact Peter Orell on (08) 9334 0454 or email peter.orell@dec.wa.gov.au

The Threatened Ecological Communities Scientific Committee, 14 years on

by Val English

An advisory committee was established in 1994 to direct the original threatened ecological communities (TEC) project. The project was funded by the then Australian Nature Conservation Agency (now the Commonwealth Department of the Environment, Water, Heritage and the Arts). The aim of this original two-year project was to establish procedures 'to identify and conserve threatened ecological communities in the South West Botanical Province'. The original TEC advisory group consisted of 10 people with expertise in various types of ecosystems. This group provided feedback on the development of categories and criteria and definitions for listing TECs, and gave guidance on the direction of the project. The group continued to guide TEC work in Western Australia until 2001, when a more formalised group, the 'West Australian Threatened Ecological Community Scientific Advisory Committee' (WATECSC) was established.



Current numbers of listed TECs based on different types of biota (living things) in Western Australia.

WATECSC was established to formally advise the Western Australian Minister for the Environment through the then Department of Conservation and Land Management about the listing, ranking and delisting of TECs in this State. The group also now provides advice about the priorities for recovery of TECs, and on other TEC-related issues that are referred to them. The committee also advises DEC about issues such as proposals for recovery work for fauna that have the potential to impact on TECs.

To date, there have been 69 communities listed as TECs in Western Australia. The two TEC committees have also assessed nominations for the listing of many other communities in the State, but have recommended that more information would be required to determine their status. These communities are then allocated to the State's list of priority ecological communities.

WATECSC currently consists of 11 people with expertise in a range of ecosystem types, including those based on microbes, invertebrates and plants, from both terrestrial and aquatic environments.

The current chairman is Greg Keighery, Senior Principal Research Scientist with DEC. Principal Ecologist John Blyth (now retired) chaired both the advisory committee and then WATECSC until 2005. Other members of the committee are from tertiary institutions, the Western Australian Museum, an environmental consultancy and DEC.

For more information please contact the WATECSC Executive Officer Mia Podesta on (08) 9334 0116 or email mia.podesta@dec.wa.gov.au.

A hydrological investigation of a *Banksia prionotes* community on transported yellow sands

by Wendy Chow and Sonja Creese

The ecological community known as the 'acorn banksia (*Banksia prionotes*) and woody pear (*Xylomelum angustifolium*) low woodland on transported yellow sands (low level sandplains)' is currently listed as a priority ecological community and is proposed as a threatened ecological community. This community contains a species-rich understorey of *Grevillea eriostachya, Melaleuca leptospermoides, Verticordia roei, Calytrix leschenaultii, Dampiera* spp., *Baeckea preissiana* and *Borya constricta*. Sheets of transported yellow sand deposited in valleys to form low level sandplains are considered to be a rare occurrence in the wheatbelt. Vegetation occurring on an extensive sandplain stretching from Bolgart to Meckering has been almost completely cleared for agriculture. There is a smaller sandplain that occurs adjacent to the Quairading townsite that is still partially vegetated. The potential threats associated with the *B. prionotes* and *X. angustifolium* low woodland community are land clearing, altered hydrology, secondary salinisation, weed invasion, inappropriate fire regimes, rubbish dumping, introduced herbivores and *Phytophthora* spp. infection.

Eleven occurrences of the *B. prionotes* and *X. angustifolium* low woodland community occur in nature reserves, with an additional occurrence recently discovered on private property near Dowerin. DEC employees, along with consultants and the local Indigenous community, will work together to install monitoring bores and moisture-profile loggers in several nature reserves around Quairading and Dowerin. These will monitor ground water and salinity levels, along with water infiltration rates which are thought to have a direct effect on plant growth. In particular, the occurrence in Badjaling Nature Reserve is under threat from encroaching salinity. This is evident from the samphire-dominated salt flat adjacent to the reserve. The data obtained from this hydrological investigation will assist DEC with the future management of this priority ecological community as well as the nature reserves in which they occur.

Above Evidence of salinity adjacent to the Badjaling Nature Reserve.

Right '*Banksia prionotes* and *Xylomelum angustifolium* low woodland on transported yellow sands' occurrence in Quairading Nature Reserve.

Photos – Sonja Creese

For more information contact Wendy Chow on (08) 9423 2374 or email wendy.chow@dec.wa.gov.au

Monitoring our communities under threat: Resource Condition Monitoring Project for TECs

by Carolyn Harding

Survey quadrat in Swan Coastal Plain '*Banksia attenuata* woodland over species rich dense shrublands' TEC. Photo – Monica Hunter

DEC's Species and Communities Branch recently started work on the threatened ecological community (TEC) component of the Resource Condition Monitoring (RCM) project. The RCM project seeks to develop monitoring protocols for significant flora, fauna and ecological communities across the State to assist in the management of these elements of our biodiversity. The project will develop databases for storing monitoring data in the department, including data collected by Natural Resource Management (NRM) regions, and develop a website to make monitoring data and information on monitoring protocols more widely available.

Nature conservation and NRM staff from around the State have been consulted since the TEC component of the project started in late December last year. The aim of this consultation is to determine which TECs are currently subject to monitoring, what questions the monitoring is seeking to answer and what aspects of the communities are being monitored. Information regarding monitoring methods and priorities for future monitoring of TECs has also been collected.

The RCM TEC team is conscious of the need to develop monitoring protocols that will assist in effectively managing TECs. The team is currently undertaking literature research and consulting experts both within and outside the department. Experienced DEC staff have provided valuable input, and further advice will be sought. Experts in monitoring vegetation and statistical analysis from CSIRO and The University of Western Australia are also providing input into the development of monitoring methods.

Sixty-nine communities are currently listed as TECs in WA. These range from microbial, to plant and invertebrate-based communities. Developing monitoring protocols for a variety of TECs provides a significant and interesting challenge.

For more information contact Carolyn Harding on (08) 9334 0344 or email carolyn.harding@dec.wa.gov.au

The awakening of the woolly one

by Lorraine Duffy

In autumn 2007, four recruitment burns were conducted by DEC's Avon Mortlock District as part of the Avon Catchment Council's Back from the Edge: Saving native species and communities at risk project, delivered by DEC and WWF-Australia. The burns were for recovery of the critically endangered western woolly cyphanthera (*Cyphanthera odgersii* subsp. *occidentalis*).

Western woolly cyphanthera is found in the Shire of Wyalkatchem. It is restricted to a single declining population of less than 100 plants on a rail reserve. Extensive surveys to locate new populations by community groups, consultants and conservation officers have been unsuccessful. For these reasons, the species was declared as rare in November 1997 and ranked critically endangered in 1998.

The restricted range of the species, combined with a relatively short life span and lack of natural recruitment recorded in the absence of fire and disturbance, has led to serious population decline with a total of 79 mature plants remaining in the wild in 2008. Damage to branches and foliage by parrots has also reduced plant health by hindering survival of less robust, aging plants.

In efforts to sustain the population, four senescent plants were burnt in June 2007 during controlled, medium-intensity burns to stimulate germination of soil-stored seed. The plots were fenced to minimise rabbit herbivory and disturbance with assistance from DEC's Great Southern District work crew. Automatic reticulation was established immediately after recruits were observed, and water tanks were kindly filled by the Koorda Shire.

The recruitment sites were monitored regularly with promising results. Some 77 western woolly cyphanthera recruits were initially recorded four months after the initial burns, with 54 of these recruits surviving into the new year (January 2008) with the assistance of late winter rains and the automatic reticulation.

It is hoped many of these recruits will survive to maturity, providing valuable seed and possibly genetic variation which may assist survival of the species. The burn sites have also been useful in raising local knowledge of the species—the Avon Mortlock Recovery Team visited the site in December 2007 and many locals have expressed interest in the recovery work occurring at the Cowcowing site.

Additional burns are planned for subsequent years under the current five-year burn proposal in efforts to increase population size and improve the potential for new recruits to establish in a favourable rainfall year.

The work is part of an Avon Catchment Council project delivered with investment from the Australian and Western Australian governments through the National Action Plan for Salinity and Water Quality and the Natural Heritage Trust.

For more information, please contact the Avon Mortlock District on (08) 9622 8940

Below from left Juvenile *Cyphanthera odgersii* subsp. *occidentalis*. Photo – Lorraine Duffy. Mature *Cyphanthera odgersii* subsp. *occidentalis*. Photo – Wendy Johnston. *Cyphanthera odgersii* subsp. *occidentalis* burn. Photo – Joel Collins.

The wonders of our bentonite lakes

by Monica Hunter

A number of studies have concluded that the herbaceous plant assemblages on bentonite lakes are different from other lakes in the Midwest region and are probably restricted to growing on bentonite substrate. These bentonite lakes are located in the Watheroo-Marchagee area across Watheroo National Park, Pinjarrega Nature Reserve, unallocated Crown land and private property, with a number of threats including mining, salinisation, water-logging, weed invasion and feral animals.

As a result of their restricted distribution and current threats, the 'herbaceous plant assemblages on bentonite lakes ecological community' was listed as an endangered threatened ecological community (TEC) in May 2002. An interim recovery plan (IRP) has since been prepared for the TEC and one of the key recommendations is to 'determine the hydrological conditions (surface and ground-water processes affecting all the lakes) and monitor changes in them.'

Bentonite lake. Photo – Sheila Hamilton-Brown

A previous DEC Project Officer initiated the project: 'A review of the monitoring bore network in the Lake Pinjarrega area in terms of its effectiveness in guiding protection measures for the Bentonite Lakes TEC'. As a result of this review, hydrological monitoring was recommended that would address recovery actions in the IRP. The monitoring includes installing logged monitoring bores, drainage water level and salinity measuring points, estimating evaporation and rainfall with an on-site gauging and/or weather-station, setting up photo points and collecting observations on growth, flowering and seed production of the TEC plant assemblages.

It is anticipated that this hydrological monitoring project will help determine the hydrological processes affecting the TEC and flowering of the plant assemblages. This information will help guide management decisions regarding the TEC.

In the two years of monitoring there has been very little germination of annual herbaceous species on the lake beds. DEC Moora District staff keep an eye on the area to determine germinating and flowering times.

If you have any questions or have seen these herbaceous plant assemblages germinating and/or flowering on the bentonite lakes, please contact Wendy Chow on (08) 9334 0372 or email wendy.chow@dec.wa.gov.au

A review of approved WA flora recovery plans

by Amanda Fairs

DEC has statutory responsibilities for the conservation of flora and fauna, through the *Wildlife Conservation Act 1950* and the *Conservation and Land Management Act 1984*.

A strategy of the department's Corporate Plan is to prepare and implement recovery plans, or interim recovery plans (IRPs), for threatened fauna, flora and ecological communities. IRPs run for three to five years and outline the recovery actions that are required to urgently address those threatening processes most affecting the ongoing survival of these taxa and ecological communities and begin the recovery process. They are developed where there is insufficient information to prepare full recovery plans.

Eleven IRPs for declared rare flora (DRF) that have run their full term have now been reviewed through a Commonwealth-funded project. The review involved evaluating the results and effectiveness of implemented recovery actions and assessing the overall effectiveness in meeting the objectives and criteria for success.

The IRPs included in the review are for the DRF species: *Eucalyptus cuprea, Darwinia oxylepis, Leucopogon gnaphalioides, Drakaea confluens, Isopogon uncinatus, Grevillea dryandroides* subsp. *dryandroides, Daviesia euphorbioides, Grevillea curviloba* subsp. *curviloba*, *Grevillea curviloba* subsp. *incurva*, *Thelymitra dedmaniarum* (previously *T. manginii* ms) and *Jacksonia pungens*.

Field trips were carried out in 2007 to collect information required to assess the current state of populations, their associated habitat, current threatening processes and the outcomes of recovery actions implemented to recover the species.

Late hammer orchid (*D. confluens*) populations in the Stirling Range National Park and Boyup Brook area were surveyed in October 2007, with a total of 26 mature plants located in the Stirling Range and 52 near Boyup Brook. Habitat in the Stirling Range was, in general, in moderate to healthy condition, but has a continuing threat of *Phytophthora cinnamomi* (dieback). Although not directly affected by dieback, late hammer orchid habitat is threatened by structural vegetation change, with its preferred open sandy clearing habitat being replaced with dense shrubs resistant to dieback. Habitat was in good condition in the Boyup Brook populations, with three new subpopulations located in Muja Nature Reserve. Grazing is a continuing threat to populations in Muja and Haddleton nature reserves.

Several populations of the cinnamon sun orchid (*T. dedmaniarum*) in the Gidgegannup area were surveyed in November 2007 with a total of seven flowering and 17 vegetative plants located. One new subpopulation was discovered by City of Swan staff, resulting in an increase in the extent of known populations. Habitat of cinnamon sun orchid is in good condition for all populations surveyed. Current threats to the species include grazing, inappropriate fire regimes, recreational vehicles and trampling.

For more information contact Amanda Fairs on (08) 9334 0554 or email amanda.fairs@dec.wa.gov.au

Clockwise from top left
Survey group at new subpopulation of *Thelymitra dedmaniarum* west of O'Brien Road. Photo – Amanda Fairs

Thelymitra dedmaniarum, FR Berry Reserve.

Drakaea confluens, Muja Nature Reserve specimens.

Photos – Andrew Brown

Survey group inspecting *D. confluens* in Muja Nature Reserve. Photo – Amanda Fairs

Island home provides better future for one of our rarest animals

by Renée Hartley

The rare Lancelin Island skink (*Ctenotus lancelini*), listed as vulnerable in Western Australia, has found a new stronghold on Jurien Bay's Favorite Island. The small lizard was once only found on Lancelin Island, until five years ago when 93 individuals bred at Perth Zoo were translocated to Favorite Island.

The Lancelin Island skink is one of only a handful of reptiles to be translocated for conservation purposes anywhere in the world. Favorite Island was selected due to the suitable habitat it provided and the absence of the threats and pressures found elsewhere on the mainland, such as cats and foxes.

The translocated population was monitored by DEC staff from the Science Division and the Jurien Bay office, with funds from the Back from the Brink project (through the Northern Agricultural Catchments Council) in December, with wonderful results. Ninety per cent of female Lancelin Island skinks captured were gravid (pregnant), some carrying up to three eggs. Only one male was captured over the monitoring week. This is most likely due to behavioural differences at this time of the year, with females being more active, looking for nesting sites and basking in the sun to develop the eggs. All of the skinks were in healthy, breeding condition. Females can lay clutches of up to five eggs in early summer. Hatchlings emerge in mid to late summer.

The Lancelin Island skink was first discovered in 1961 and was recognised as a distinct species in 1972. It was named *Ctenotus lancelini*, after its island home. This small skink of up to 22 centimetres in length and 10 grams in weight feeds on insects and spiders found among leaf litter. Their habitat is very sensitive to disturbance and visitors can help by staying on the beach and not walking through the vegetation.

Top A Lancelin Island skink in a pit trap on Favorite Island.

Above Checking the condition of a Lancelin Island skink caught on Favorite Island.

Photos – Renée Hartley

For more information contact Renée Hartley on (08) 9652 1911 or email renee.hartley@dec.wa.gov.au

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Taking weed action in Dampier Peninsula's vulnerable vine thickets

by Alison McGilvray

The Dampier Peninsula contains significant communities of native vine thickets, remnants of monsoonal rainforests often restricted to the wetter parts of northern Australia. These highly biodiverse threatened ecological communities (TECs) provide important habitat for native fauna, and are valuable food sources and culturally significant for Aboriginal people. However, they are increasingly threatened by frequent hot wildfires, weed infestation, uncontrolled vehicular and pedestrian access, camping, cattle damage and coastal development.

This pilot project provides training and employment opportunities for Indigenous communities, and addresses threats to priority vine thickets identified in survey work in 2001. It is delivered by DEC and Environs Kimberley, through Natural Heritage Trust funding provided through the Rangelands Natural Resource Management Coordinating Group. The project is supported by traditional owner groups, the Kimberley Land Council, Kimberley TAFE and the Shire of Broome.

Weed control sites have been established at the popular recreational sites of James Price Point and Quandong Point, in collaboration with the local Goolarabooloo group. Similar sites have also been established at Lombadina, Djarindjin and One Arm Point communities where the Indigenous Bardi Jawi rangers are partly funded through this project. Kimberley TAFE is providing the Bardi Jawi rangers with accredited training in mechanical equipment use and chemical handling using the vine thickets as a training site. The rangers will undertake early weed detection and monitoring activities, using the identification and mapping skills learnt during control and training in the demonstration sites. Different weed management strategies, using a variety of hygiene, physical and selective herbicide practices, are adopted at all sites, depending on the condition, location and cultural requirements of individual vine thicket patches.

From above clockwise A training session with the Bardi Jawi Rangers and Kimberley TAFE at Lombadina. Removing Leucaena at the Lombadina demonstration site. James Price Point site prior to control works. Photos – Alison McGilvray. James Price Point site following initial weed control. Photo – Louise Williams.

At Lombadina, Djarindjin and One Arm Point, many of the vine thicket areas are located in significant male-only law grounds. In some areas, elders have approved the male Bardi Jawi rangers to work within these areas without the assistance of female training officers.

At this early stage the project has received widespread community support and participation. It builds on strong ties already existing between traditional owners and support organisations, and establishes a workable model for addressing environmental weeds in remote communities.

For more information please contact Alison McGilvray on (08) 9182 2041 or email alison.mcgilvray@dec.wa.gov.au

Agencies working together for the critically endangered *Grevillea acropogon*

by Jo Smith

The Department of Water (DoW), adjacent landowners and DEC are working together to protect a population of *Grevillea acropogon*.

G. acropogon is a prostrate to erect shrub with rigid, branching leaves that are very prickly with sharp pointed tips. Bright red flowers appear from about June through to September transforming this prickly customer into a showy masterpiece. The species, found on shallow brown sandy clay over laterite, on the margins of seasonally inundated areas is very closely related to the critically endangered *Grevillea maccutcheonii*, which grows in similar habitat in the Busselton area.

G. acropogon has now been ranked as critically endangered and is only known from one location in the Donnelly District near Lake Unicup on land managed by DoW. One other population consisting of one plant was also recorded in DEC's Blackwood District, but recent surveys to relocate this plant have been unsuccessful.

The 2006 monitoring indicated 59 plants and these were tagged with an identifying number. Thirteen per cent of the population was observed as having less than 50 per cent healthy foliage cover. Monitoring in 2007 located two additional plants (juveniles), but the overall population numbers had dropped with the sudden death of three plants that were observed to be in excellent health the previous year. The health of the remaining population had also declined with 33 per cent now having less than 50 per cent healthy foliage cover. Salinity, drought, vehicular traffic and trampling by herbivores are the main threats to the species at this location.

A bushfire in February 2007 that came dangerously close to the population, and the sudden decline in population health, resulted in a united effort by DoW, DEC and adjacent landowners to implement some of the recovery actions outlined in the interim recovery plan drafted in 2007. DoW is in the process of re-aligning a track through the population and has notified its staff to stop using the track until the realignment has been constructed. The adjacent landowner has replaced the old boundary fence to prevent livestock from entering the reserve. The materials for the fence were purchased with DoW funding. To protect the population from the detrimental effects of other animals (particularly kangaroos) trampling over the foliage of the plants, DEC staff are erecting an exclusion fence. DEC staff members have been collecting seed and plant material for cryo-storage and propagation. This team effort will hopefully minimise some of the threatening processes to enable research on the species' ecology and biology and to conserve the genetic biodiversity of *G. acropogon*.

Above *Grevillea acropogon* flower.

Below Tagging plants and capturing monitoring data.

Photos – Jo Smith

For more information contact Jo Smith on (08) 9776 1207 or email jo.smith@dec.wa.gov.au

Bankwest *LANDSCOPE* Conservation Visa Card funded projects recently completed.

DEC has continued to receive funding from the Bankwest *LANDSCOPE* Conservation Visa Card trust funds to aid recovery of threatened species and ecological communities. Summaries of three projects completed over the past year with the aid of these funds are outlined here. Full reports are lodged in DEC's library at Woodvale.

Above: Glossy-leaved hammer orchid (*Drakaea elastica*). Photo – DEC

Bob Blackburn Reserve – Installation of limestone on existing track.

Proponents: Melissa Hoskins and Fiona Felton (DEC Swan Region).

Bob Blackburn Reserve covers 9.14 hectares within the City of Armadale and contains two occurrences of the endangered threatened ecological community (TEC) known as '*Banksia attenuata* and/or *Eucalyptus marginata* woodlands of the eastern side of the Swan Coastal Plain'. To reduce the risk of *Phytophthora cinnamomi* spreading from the three existing infestations, staff from DEC's Swan Region collaborated with the City of Armadale to upgrade an existing sand track to limestone thereby reducing risk from the three existing infestations.

The role of pollinators and mycorrhiza in rarity of the glossy-leaved hammer orchid, (*Drakaea elastica*), and the kneeling hammer orchid (*Drakaea concolor*)

Proponent: Ryan Phillips, Botanic Gardens and Parks Authority.

By baiting for the presence of mycorrhiza (fungi) using hammer orchid seed and pollinators using picked hammer orchid flowers, it is possible to determine the role of these partners in limiting the distribution of orchids and the suitability of sites for re-introduction. The results of this project will be published in scientific journals upon completion of the research being undertaken on the other species of *Drakaea*.

Increase community and local government awareness of declared rare and priority flora that occur in DEC's Merredin District, by the compilation of species information and photos.

Proponent: Wendy Johnson (DEC Merredin District).

Currently DEC's Merredin District has 67 species of declared rare flora, 29 critically endangered, 20 endangered and 18 vulnerable and 228 species of priority flora. The majority of these species occur on private property, rail and road verges and in nature and shire reserves.

Much of the documented information available for these species is written in botanical terms, most of which is not easily interpreted by members of the general public. By converting this information into 'everyday' English and providing it to members of the public, shire employees and special interest groups, it can be used to raise conservation awareness and also for the identification of rare and priority flora species that occur in DEC's Merredin District. The project employed a university student for two weeks to compile the species information and photographs. This will be used to develop posters, booklets and information sheets on the rare and priority flora species that occur in the district.

For more information please contact Jill Pryde on (08) 9334 0263 or email jill.pryde@dec.wa.gov.au

Priority Ecological Communities – updated list

Species and Communities Branch staff coordinate the listing and recovery of threatened ecological communities (TECs) in Western Australia. Nomination forms are prepared for ecological communities for listing as threatened or priority, change of status or delisting. The purpose of the nomination form is to provide recommendations to the Western Australian Threatened Ecological Communities Scientific Committee (WATECSC) for its consideration and subsequent advice to the Minister for the Environment, who makes the final decision about the TEC list (see 'The Threatened Ecological Communities Scientific Committee, 14 years on, by Val English' in this issue).

Possible TECs that may not meet survey criteria are added to DEC's priority ecological community (PEC) lists under priorities 1, 2 and 3. Ecological communities that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened list, are placed in priority 4. These ecological communities require regular monitoring. Conservation dependent ecological communities are placed in priority 5.

The PEC list has recently been updated and the updated list and nomination forms can be found in 'related documents' at www.naturebase.net/content/view/849/1210/.

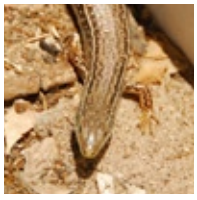
Recovery plans approved

Eight interim recovery plans have recently been endorsed by DEC's Director of Nature Conservation. All plans have been written with the assistance of the Commonwealth Department of the Environment, Water, Heritage and the Arts through the Natural Heritage Trust Program. All plans will be sent to the Commonwealth for consideration of adoption under the EPBC Act 1999.

No/Series No	Title	Prepared by	DEC Region involved
237	Paynter's tetratheca (*Tetratheca paynterae*) subsp. *paynterae* ms	Geoff Cockerton, Andrew Brown, Piers Goodman and Vanessa Clarke	Goldfields
238	blue tinsel lily (*Calectasia cyanea*)	Craig Douglas, Sarah Barrett, Amanda Fairs	South Coast
239	Wyalkatchem foxglove (*Pityrodia scabra*)	Mia Morley, Andrew Brown, Ken Atkins	Wheatbelt
240	robust cone flower (*Isopogon robustus*)	Craig Douglas, Amanda Fairs, Wendy Johnston, David Joliffe	Wheatbelt
241	Chiddarcooping wattle (*Acacia lobulata*)	Kate Brunt, Andrew Brown	Wheatbelt
242	Yornaning wattle (*Acacia insolita* subsp. *recurva*)	Craig Douglas, Marie Strelein	Midwest
243	woolly wattle (*Acacia lanuginophylla*)	Craig Douglas, Bethea Loudon, Wendy Johnston, David Jolliffe	Wheatbelt
244	Wongan gully wattle (*Acacia pharangites*)	Craig Douglas, Joel Collins, David Jolliffe, Wendy Johnston, Andrew Brown	Wheatbelt

Left *Tetratheca paynterae*. Photo – Andrew Brown






From far left Sun star orchid (*Thelymitra stellata*); juvenile *Cyphanthera odgersii* subsp. *occidentalis*; a Lancelin Island skink in a pit trap on Favorite Island; and *Grevillea acropogon* flower. Photos – DEC

ACT NOW FOR THE FUTURE

Department of Environment and Conservation
Our environment, our future

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