

Issue 69

Autumn 2009

Time of Djeran and Makuru in the Nyoongar calendar.

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Department of
Environment and
Conservation 

Our environment, our future

Bushland News is a quarterly newsletter of Urban Nature, a Department of Environment and Conservation (DEC) program to support community involvement in bushland conservation.

From the flames

By Steve Easton

On 16 January 2009 a deliberately lit wildfire burnt through 40 ha of Kings Park bushland. The fire affected 13 ha of Mount Eliza Escarpment which has been the focus of restoration activities since 1996. The Botanic Gardens and Parks Authority (BGPA) is currently addressing management issues and instigating long-term monitoring programs in the following areas.

Risk management

Risk management activities have been BGPA's initial focus with BGPA staff walking through the affected tracks, conducting tree inspections and removing material which presents potential public safety risks. Sections of felled trees are being placed within burnt areas to provide habitat for reptiles as they move back into the burnt areas. This timber will also collect organic material and seed carried by the breeze, retaining them in preparation for winter. Paths will be progressively reopened as they are deemed safe for public access. Entry to the burnt areas off the paths is being restricted to minimise disturbance to the site while it is in a very sensitive state.

Slope stability and rock-fall protection has been a high priority. Little deterioration to the slope structure occurred, though exposure of the slopes to the winter rains will be monitored closely and remedial works carried out as required. Various erosion control options are being considered for inclusion in the research program. Risk management infrastructure on the escarpment, such as drape meshing and rock catch fencing escaped with only superficial damage, retaining its structural integrity.

Research and monitoring

The research and monitoring opportunities presented by this event are enormous. A review will determine where to concentrate our efforts to achieve maximum benefit for future management. While the impact of the fire is disappointing, it provides us with



View from Mount Eliza Escarpment following a fire in January 2009. The site will be closely monitored to assess the impacts of the fire and efficacy of earlier restoration activities. Photo – Steve Easton

the opportunity to observe the effectiveness of restoration activities to date. Permanent monitoring plots previously established for restoration works will provide baseline data. Encouragingly, just four weeks after the fire, regeneration was occurring from a range of species.

As grasstree (*Xanthorrhoea brunonis*) fronds sprout, the length of frond affected by the heat provides an indication of the fire intensity in that location. Frond measurements taken across the burn site will be overlaid with vegetation types to produce a map, which may assist our understanding of regeneration outcomes.

Vehicle movement causes soil disturbance which impacts the seed bank in the surface layer. Fire vehicle tracks will be mapped and monitored to observe any differences in regeneration.

A number of vulnerable flora sites located within the burnt area will be closely scrutinised for signs of recruitment over the winter months.

These are species considered vulnerable in Kings Park due to their limited distribution throughout the park, and they are monitored each year for changes in number or health.

Trapdoor spider sites were also affected during the fire. Fortunately the spiders are dormant at this time of year and mature spiders have burrows up to 40 cm below the surface, offering some protection from the heat of the fire. During the cooler months when the spiders are active, the population will be surveyed to establish the impact of the fire. Monitoring programs are also being developed to investigate the impact on reptile and bird populations.

In the next 18 months the main focus of our restoration program will be weed control, particularly veldt grass (*Ehrharta calycina*) and woody species stimulated by the fire. Sites will be monitored for natural regeneration and some will be targeted for planting in the 2010 season to supplement the natural recruitment process.

Urban Nature UPDATE

By Julia Cullity

Urban Nature has been in a state of change. In early January I started as the Community Bushland Coordinator. I'm excited to be a part of a great team and looking forward to getting involved with the community to promote and carry out better bushland management. In February, we farewelled Rebecca Hayes who has done a great job helping with many projects. We wish her well in her new position as Land Administration Officer for the Department of Environment and Conservation's (DEC) Land Unit.

Focus on recovery of Carnaby's black-cockatoo

By David Mitchell

In December 2008, a symposium was held by DEC, Birds Australia WA and WWF-Australia on the endangered Carnaby's black-cockatoo (*Calyptorhynchus latirostris*). The symposium enabled individuals and organisations with an interest in Carnaby's black-cockatoo to find out about recent work, to help plan future recovery actions for the species and to maintain effective networks.

As a threatened species, Carnaby's black-cockatoo is unique in that the birds are a highly visible and charismatic part of the urban environment. This can make it difficult to demonstrate that they are threatened with extinction. Many birds we now see are older, long-lived birds and we do not know how well they are being replaced by young birds. It is possible that these adult birds may continue to return to Perth for many years,

and most people would not notice that young birds were missing until it is too late to do anything about it. I, like many people, hope our kids won't be the last generation to see flocks of black-cockatoos.



(From left) Symposium organising committee DEC Senior Research Scientist and Birds Australia WA representative Allan Burbidge; WWF-Australia's Michael Roache with 'Harmony' the Carnaby's black-cockatoo; and Chairman of the Carnaby's Black Cockatoo Recovery Team and DEC Nature Conservation Regional Leader David Mitchell. Photo – Liz Grant

Rapid assessments of bush health



Friends of Porteous Park using the Rapid Habitat Assessment with DEC Regional Ecologist Geoff Barrett. Photo – Julia Cullity

Rapid Habitat Assessments are under way with the completion of more than 60 surveys of bird and ant activity, weed cover and tree health across eight reserves in the Swan Region. These surveys give us an idea of how well a reserve is functioning and whether future planning and management could be improved. Thank you to the people who responded to our request for help. If you would like to do a survey in your bushland call Geoff on 9423 2907.

Wetland conference

Rebecca Hayes attended the annual WA Wetland Management Conference at Cockburn Wetlands Education Centre on World Wetlands Day, 2 February 2009. The day marks the anniversary of the signing of the International Convention on the Conservation of Wetlands in the

Iranian city of Ramsar in 1971. The conference has become the largest World Wetlands Day event in Australia, and helps raise awareness about the work being done to conserve, manage and restore our priceless wetland environments in WA.

Winter Bushland News

Winter *Bushland News* contributions should be sent to Urban Nature by **Friday 22 May 2009**.

Compiled and edited by Jo Tregonning.

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Current and archived issues of *Bushland News* are available at www.dec.wa.gov.au/programs/urban-nature/bushland-news.html

BUSHLAND WEEDWATCH:

Soldiers or cape cowslips (*Lachenalia*) By Karen Bettink

The genus *Lachenalia* contains approximately 55 species of deciduous bulbous geophytes endemic to southern Africa. Four species of *Lachenalia* are naturalised in south-west Western Australia and have the ability to invade bushland and impact on biodiversity.

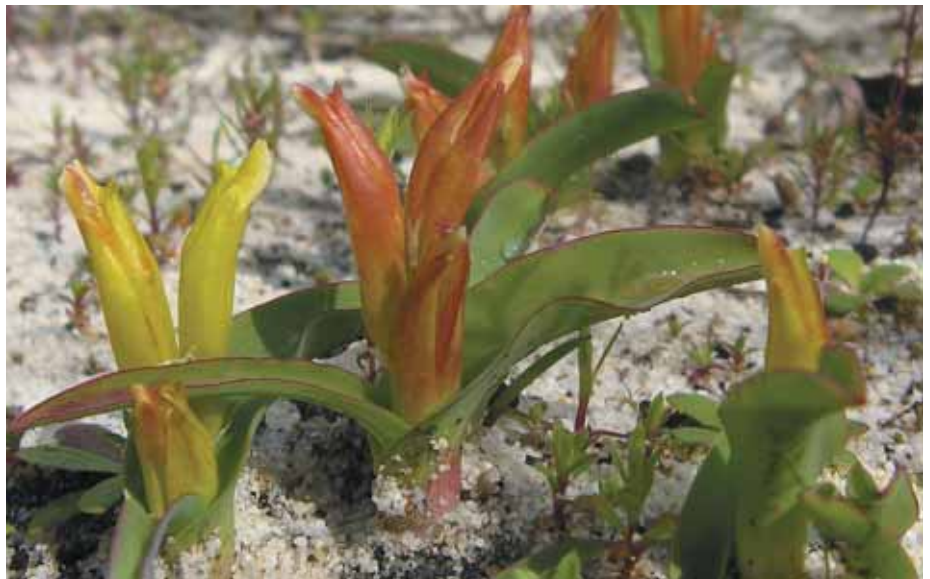
Known generically as cape cowslips or soldiers, *Lachenalia* are part of the Hyacinthaceae or hyacinth family. Their native distribution extends from south-western Namibia to parts of South Africa in a variety of habitats and vegetation types in winter rainfall zones. Valued in some parts of the world as ornamentals, various *Lachenalia* species have been offered for sale in nurseries around Australia

Lachenalia in WA

Yellow soldier (*L. reflexa*) is the most common and widespread species in bushland of south-west WA, and is considered the most problematic and invasive of the species known in Australia. Popular as garden plants, three other species are less common but are also found in WA bushland. Spotted soldier (*L. aloides*) has tricoloured flowers of orange, green and purple-brown and is the mostly widely planted. It is occasionally found naturalised throughout the State's south-west. Red soldier (*L. bulbifera*) is robust, red-flowering and can produce numerous small bulbils along the stems. *L. mutabilis* is less common, has pale blue flowers on opening which turn crimson brown.



Red soldier (*Lachenalia bulbifera*).
Photo – Kate Brown



Yellow soldier (*Lachenalia reflexa*) in flower at Bibra Lake. Photo – Karen Bettink

Within the genus, there is much variation in flower colour, shape and size, however *Lachenalia* have several key features which make them readily identifiable at certain times of year. They have two opposite leaves, are annually renewed, and flower in winter and early spring.

Yellow soldier

Yellow soldier was first recorded naturalised south of Perth in 1957, most likely after escaping from gardens or from material accidentally or deliberately transferred into bushland. With its impacts on biodiversity and potential for rapid spread, yellow soldier is placed on the National Environmental Alert List of environmental weeds. WA currently has the only known occurrences of this weed in Australia and 31 populations have been identified. All of these populations are found on the Swan Coastal Plain and almost all occur in bushland reserves – many with significant conservation values. They can be found in densities up to 2,000 per m².

Yellow soldier has the potential to spread throughout the south-west corner of WA, and increase in abundance within its current range. It has the ability to invade both intact and disturbed bushland, causing severe impacts on biodiversity. Once established in medium to high densities, it displaces native herb and annual plant species, causing loss of plant diversity. Seed does not easily

spread over long distances, but rather, human activity appears to be the main cause of medium to long-distance dispersal.

Yellow soldier is well-adapted to survive the pronounced dry and hot periods of south-west WA by losing the above-ground leaves and stems, and the bulb enters dormancy during late spring. Upon flowering the old bulb is exhausted and another new bulb is formed. Plants grow rapidly, reach maturity and flower in two to three years.

Management and control

While some infestations of *Lachenalia* are small and localised and can be easily eradicated, many infestations, particularly of yellow soldier, are well-established. Once established in bushland, they are difficult to control. Most treatments involve careful application of herbicide in June/July crucially just prior to flowering. Seed is unlikely to be viable in the soil for more than two years.

More information

Hussey B. M. J., Keighery G.J., Lloyd S.G., and Cousins R.D. (2007) *Western Weeds – A Guide to the Weeds of Western Australia*. Second edition. Weeds Society of WA (Inc), Victoria Park.

CRC for Australian Weed Management (2003) *Weed Management Guide: Yellow soldier – Lachenalia reflexa*.

ECONOTES:

Macroinvertebrate life in our waterways

By Catherine Johnston

The *Ribbons of Blue* program (Waterwatch WA) is part of a national network that helps the local community and schools become involved in caring for their local waterways. Discovering and analysing the fascinating biological, physical and chemical indicators of water quality has resulted in many ongoing monitoring programs being established by community and school groups. This year, *Ribbons of Blue* celebrates its twentieth anniversary!



The main focus of the *Ribbons of Blue* program is to increase understanding about water quality and to provide the information, support, technical expertise and resources needed to take local action. It includes environmental education, water quality monitoring, restoration projects and special events such as competitions and data-gathering 'snapshots'.

Major indicators of water quality in rivers, wetlands, lakes and estuaries are measured as part of monitoring activities – the *physical* characteristics (e.g. salt, pH, temperature, turbidity and dissolved oxygen), *chemical* parameters (e.g. phosphate and nitrate) and the *biological* component (macroinvertebrates). Each of these indicators help to build a picture of the health of a particular water body – although none should be used on their own to form any kind of conclusions about water quality health.

Macroinvertebrates can be thought of as the living aspect of water quality. These aquatic creatures spend some or all of their life in an aquatic environment. 'Macro' means that they are large enough to be seen with the naked eye, and 'invertebrate' means that they have no backbone. They live in various parts of a water body, from the fringes and mud to the surface and air. They can be grouped according to the way they feed (shredders, scrapers, collectors/filter feeders and piercers) and what they eat (herbivores, detritivores and carnivores). Macroinvertebrates are an integral part of the aquatic ecosystem and food chain. They are also an important food source for birds.

Like all aquatic creatures, the survival of macroinvertebrates depends on the water quality of the environment in which they live. This is why they provide a helpful guide to understanding water quality. Macroinvertebrates have different sensitivities to pollution, ranging from extremely tolerant (e.g. mosquito larvae) to extremely sensitive

(e.g. stonefly larvae). So an investigation of the types and numbers of macroinvertebrates living in a particular water body can help give a clue about water quality health. For example, if only numerous pollution tolerant species are found there may be a problem that requires investigation. This will include further water testing, riparian vegetation assessment, and fauna and bird surveys.



Calista Primary School sampling macroinvertebrates in the Peel Main Drain near Bertram Road. Photo – Catherine Johnston

The most common types of freshwater macroinvertebrates are: **insects and insect larvae** – bugs and beetles, dragonfly and caddisfly larvae, and different fly larvae; **molluscs** – snails and mussels; **crustaceans** – shrimp, gilgies and marron; **arachnids** – spiders and mites; and **worms** – leeches, flatworms and segmented worms. Different macroinvertebrates are found in estuarine environments – especially crustaceans, molluscs and worms as well as other species such as jellyfish.

Spring is the time of year when the greatest diversity of species will be found, and so this is when *Ribbons of Blue* holds its annual 'Macroinvertebrate Snapshot'. Schools and community groups from around WA sample, identify and count the 'critters' found in their local waterway. As well as being an interesting and fun exercise, the data provides helpful

information about the biodiversity and ecological health of a site. Results are compiled in a report and made available on the *Ribbons of Blue* website.

Many school and community groups are involved in monitoring their local waterway through *Ribbons of Blue*. Their data is registered with the Department of Water and is accessible to anyone in

Australia. As well as providing invaluable information about the water quality of a site, their monitoring can lead to action projects such as revegetation works and site protection and clean-up.

Before carrying out any sampling you must gain permission from the landholder and/or manager of the waterway to access and survey the water body. To know more about *Ribbons of Blue* and/or to be involved call the State Coordinator on 6467 5127 or visit www.ribbonsofblue.wa.gov.au.

Helpful links and resources

Ribbons of Blue
www.ribbonsofblue.wa.gov.au/resources/educational-resources-available.html

Waterwatch Australia
www.waterwatch.org.au/

Waterwatch Australia National Technical Manual: Module 3, Biological Parameters.
www.waterwatch.org.au/publications/module3/macroinvertebrates.html

Murray-Darling Freshwater Research Centre, Bug Guide.
www.mdfrc.org.au/BugGuide/index.htm

Waterwatch Adelaide, Teaching Resources.
www.waterwatchadelaide.net.au/index.php?p?page=education-materials-4

Signal2, A Scoring System for Macroinvertebrates.
www.environment.gov.au/water/publications/environmental/rivers/nrhp/signal.html

Department of Water, Water Fact Sheets
www.portal.water.wa.gov.au/portal/page/portal/WaterQuality/Publications/WaterFacts

Climate change observatory up and running By Dr Nic Dunlop

Preliminary work to establish a climate change and biodiversity observatory on Bush Heritage Australia's Charles Darwin Reserve is nearing completion. The reserve, formerly known as White Wells Station, is a four-hour drive north-east of Perth straddling the mulga-eucalypt line on the north-eastern Wheatbelt.

Bush Heritage Australia manages the reserve for biodiversity conservation, making it possible to limit grazing impacts and other stress variables that would otherwise confound the detection of climate change responses. Climate models universally predict the area will become warmer and drier.

The observatory is a joint venture between the Conservation Council of WA (CCWA) and Bush Heritage Australia, and will be a key component of the CCWA's citizen science program. During the past two years, citizen scientists have been working with CCWA to make a biodiversity inventory at a number of long-term study sites. Three of these sites are in the northernmost outliers of the Wheatbelt-Interzone salmon gum and



Charles Darwin Reserve Co-Manager Kurt Tschirner and Conservation Council of WA Volunteer Meteorologist David Ball with the new automatic weather station. Photo – Nic Dunlop

gimlet woodland. The other two are in southernmost outliers of mulga woodland-shrubland. Indicator plant and animal species or communities will ultimately be selected so they can be monitored for potential responses to climate change.

These changes may involve the acclimation to changing conditions (or doing things differently), micro-evolution (changes in adaptive gene frequency), re-distribution (shifting to another area), or local extinction.

In mid-January, the observatory commissioned a new automatic weather station to track weather and climate patterns at Charles Darwin Reserve. As well as continuously measuring temperature, humidity, wind-speed and direction, and rainfall, the station is equipped with a radiometer to measure solar radiation. Coupled with remote-sensing techniques, the radiometer may enable changes in land-system and vegetation productivity to be measured, along with the capacity of the rangeland to sequester carbon.

A research plan and long-term management structure will be developed for the observatory during 2009.

To find out more about the Charles Darwin Climate Change Observatory visit [www.conservationwa.asn.au/content/view/89/171/](http://www.conservationwa.asn.au/content/view/full/9/171/) or call CCWA Biodiversity Conservation Officer Nic Dunlop on 9420 7266.

Project Dieback update By Lindy Twycross

The large and ambitious mapping project to determine the true extent and threat of the insidious and deadly disease *Phytophthora* dieback across the State's south-west has now been completed. The NRM-funded *Project Dieback* and DEC collated all existing smaller dieback maps from across the regions. The likelihood of the disease being present in the larger unmapped areas was then assessed using experts' local knowledge and opinions, and through interpreting aerial photographs.

Now, for the first time, we have a complete broad-scale picture of dieback – where it is and where it isn't. *Project Dieback* is now working up strategic plans for each of the regions to protect our most valuable biodiversity assets from the threat of *Phytophthora*.

For land managers and planners this means that areas 'at risk' can be more easily identified for protection. Importantly, the mapping will enable managers at all levels to demonstrate and communicate to others the risk of dieback to their area and allows the significance of their area to be put in a broader context at State, regional and local scales.

Project Dieback is now producing posters of the dieback maps for each of the NRM regions. These will be available soon. Land managers will later be able to request access to the pixelated data under a licence agreement, for planning or communication purposes. For more information contact Lindy on 9374 3333 or Lindy.Twycross@water.wa.gov.au.



(From left) Tim Fisher (DEC), Renee Evans (DEC), Simon Robinson (Glevan) and Leonie Stubbs (Friends of Paganoni) mapping Phytophthora dieback in Paganoni Reserve. Photo – Lindy Twycross

Opportunities for you to take part! Visitors always welcome but please confirm activities with the contact person. Most activities are FREE!

Please send us your July, August, September and early October events by Friday 22 May 2009.

Conservation Volunteers Australia 2009 conservation activity schedule. Overnight country trips to one-day activities. 2/343 Newcastle St, Northbridge. Call Andrew 9227 5711 or visit www.conservationvolunteers.com.au.

Sundays 8am–10am Bushcare activities every Sunday with the Friends of Shenton Park Bushland. Contact Dani 9381 3470 or bojel@it.net.au.

Sundays 8.30am Bushcare activities with the Friends of Wireless Hill are held second and fourth Sunday of each month. Meet at main car park. Contact Margaret 9315 9075 or s3mmatthews@hotmail.com.

Thursdays 8am–9am Bushcare activities every Thursday with Byford Enviro-Link. Call Johanne Garvey or Kristy Gregory 9526 0199.

Saturdays 9am Bushcare activities with the Friends of Brixton Street wetlands are held on the third Saturday of each month. Call Regina 9459 2964.

April

3 Friday–4 Saturday 10am–2pm Henderson Environment Centre open days. Showcasing community groups from the northern suburbs, displays, plant sales, t-shirts, live animals. Sponsored by City of Stirling. Call 9345 8665.

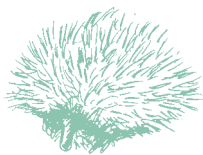
4 Saturday 8am Foreshore weeding. Meet at Kent St, Bicton. Contact **BEAG**.

4 Saturday 9am–1pm 'Rock Group on Tour'. Come on a bus tour to explore some geological sites in the eastern hills. Contact **BSFH**.

4 Saturday 6pm Guided night stalk at Baldvis Children's Forest. Cost \$5 adult, \$2.50 child (6-16 years). Includes light supper. Contact **BCF**.

9 Thursday 7.45pm 'Southern section of Bibbulman Track' with guest speaker Nina McLaren. Call **WSWA** (Armadale).

14 Tuesday 8pm 'Fungi of the South Coast' with guest speaker Katrina Syme. Call **WSWA** (Perth).



15 Wednesday 9.30am–12.30pm Forest Treasure Hunt at Baldvis Children's Forest. Learn to use a GPS, navigate to find clues and solve the puzzle. Includes morning tea and sausage sizzle lunch. Suitable 8+ years. Cost \$10 adult, \$5 child. Contact **BCF**.

17 Friday 10.30am–3pm 'Back on Track – Basic Bush Survival' teaches children traditional and modern navigation techniques, water collection methods, fire-making skills and how to signal for help in an emergency. Perth Hills National Parks Centre. Suitable 7–12 years. Cost \$27pp/\$25 DC. Call **N2N**.

18 Saturday 8am Guided walk at Lake Gwelup. Call **FLG**.

18 Saturday 7am Guided bird walk (family) at Herdsman Lake Wildlife Centre. Gold coin donation. Call **WAGL**.

18 Saturday 6.30pm–8.30pm 'Nocturnal Delights' at the Perth Hills National Parks Centre. Guided torchlight walk and interactive marsupial encounter. Damper and billy tea supper. Suitable family 6+ years. Cost \$15pp/\$13 DC. Call **N2N**.

19 Sunday 9.30am 'Busy bee' with the Friends of Piesse Brook. Meet at gate into Kalamunda National Park, end of Schipp Rd, Piesse Brook. Email linda@johnstanley.cc to confirm. Visit www.friendsofpiessebrook.org.au.

19 Sunday 8am–11am Bush regeneration with the Friends of Warwick Bushland. Contact **FWB**.

19 Sunday 10.15am–12.45pm 'Bikes, Bush Babies n' Brunch' Cycle part of the Munda Biddi off-road trail followed by an interactive animal encounter and brunch. Perth Hills National Parks Centre. Cost \$20pp/\$18 DC. Suitable family 8+ years. Call **N2N**.

25 Saturday 8am Guided walk at Star Swamp. Call **FSS**.

26 Sunday 10.30am Guided walk 'In the footsteps of World War II'. A 6 km walk to POW ruins and picnic by creek. Call **JHS**.

26 Sunday 1pm–3pm Behind the scenes at the Perth Observatory, Gingin. New 30-inch telescope! Suitable family 8+ years. Cost \$13pp/\$11 DC. Call **N2N**.

26 Sunday 7pm–9.30pm 'Secrets of the Aboriginal Night Sky' with Noel Nannup at Perth Observatory, Gingin. Cost \$38.50 adults, \$34.50 seniors, \$17.50 child. Contact 9575 7740 or stars@ginginobservatory.com.

May

2 Saturday 8am Bushland weeding. Meet at Kent St, Bicton. Contact **BEAG**.

2 Saturday 5.30pm Guided night stalk at Baldvis Children's Forest. Cost \$5 adult, \$2.50 child (6-16 years). Includes light supper. Contact **BCF**.

3 Sunday 10.30am–7.30pm 'Chidlow Fauna Trail'. Learn about native animals, their food and habitats. Look behind the scenes at a native animal hospital and listen to fauna carers. Contact **BSFH**.

12 Tuesday 8pm 'Propagation and Cultivation of Native Flora' with guest speaker Hazel Dempster. Call **WSWA** (Perth).

14 Thursday 7.45pm 'Exmouth and the Pilbara' with guest speaker Dr Eddy Wajon. Call **WSWA** (Armadale).

15 Friday 5.30pm Guided night stalk at Baldvis Children's Forest. Cost \$5 adult, \$2.50 child (6-16 years). Includes light supper. Contact **BCF**.

15 Friday 7.30pm Guided night stalk at Lake Gwelup. Call **FLG**.

16 Saturday 8am Guided walk at Lake Gwelup. Call **FLG**.

16 Saturday 7am Guided bird walk (family) at Herdsman Lake Wildlife Centre. Gold coin donation. Call **WAGL**.

17 Sunday 8.30am–12 noon Friends of Kings Park plant sale. 7,000 native plants for sale including rare plants. \$2–\$6 per pot. Proceeds help the Friends fund conservation research and special projects in Kings Park. Pines Picnic area, Fraser Ave, Kings Park.

17 Sunday 8am–11am Fungi survey with the Friends of Warwick Bushland. Contact **FWB**.

22 Friday 7.30pm Guided night stalk at Star Swamp. BYO torch. Call **FSS**.

23 Saturday 8am Guided walk at Star Swamp. Call **FSS**.

23 Saturday 9.30am–12noon; 1pm–3.30pm 'Boots On, Bushland Safety' (morning) provides an opportunity to discuss your bushcare safety issues. 'Safety is in Your Hands' (afternoon) provides practical information to make sure your efforts are safe i.e. avoid introducing soil pathogens. Ledger Rd, Goosebury Hill. Contact **BSFH**.

REGISTRATION/CONTACT DETAILS

BCF Baldvis Children's Forest
Contact Mary Rayner
9524 1150 or
mary.rayner@det.wa.edu.au.

BEAG Bicton Environmental Action Group Contact Peter Neesham 9339 7795 or pneesham@bigpond.net.au.

BSFH Bush Skills for the Hills offers free hills-focused workshops. Contact Roberta Circosta 9424 2216 or roberta.circosta@emrc.org.au.

FLG Friends of Lake Gwelup
Meet at Scout Hall, Huntriss Rd, Gwelup. Call Christine 9447 2983.

FSS Friends of Star Swamp Meet at Henderson Environment Centre, Groat St North Beach. Call Christine 9447 2983.

FWB Friends of Warwick Bushland Meet at bowling/tennis club car park, Lloyd Drv, Warwick. Contact Janina Pezzarini 9447 9494 or neen@ext.uwa.edu.au.

JHS Jarrahdale Heritage Society Informative guided walks of natural heritage in Jarrahdale. Meet at Old Post Office. Devonshire teas served at 10am. Cost \$5 adult, \$10 family (2A + 2C). Call Joy 9526 0121 or Sheila 9525 5352.


N2N Nearer to Nature activities by DEC. Affordable prices. Discount for Discovery Club (DC) members. Bookings call N2N 9295 2244 or visit www.naturebase.net/n2n.

WAGL WA Gould League
Herdsman Lake Wildlife Centre.
Call 9387 6079. Visit
www.wagouldleague.com.au.


WSWA (Armadale Branch) Wildflower Society of WA
Field Study Centre, Armadale Settlers' Common, Triton Crs.
Call Chris 9398 9140.

WSWA (Perth Branch) Wildflower Society of WA
Subiaco Community Centre. Call Nina 0427 936 566.

24 Sunday 9am–11am

 **Guided bird walk** with Birds Australia at Baldy's Children's Forest. Gold coin donation. Morning tea included. Contact **BCF**.

24 Sunday 10.30am

 **Guided walk** at Kitty's Gorge. Steep gradients, fitness required, 12 km. Call **JHS**.


29 Friday 5.30pm

Guided night stalk at Baldy's Children's Forest. Cost \$5 adult, \$2.50 child (6-16 years). Includes light supper. Contact **BCF**.

June

 **Planting 3,000 local native plants** at Watermans Bay and North Beach on weekends during June. All help appreciated. Interested in volunteering? Email Stirling Natural Environment Coastcare on stirlingcoastcare@hotmail.com.


6 Saturday 8am

 **Weeding** at Point Walter. Meet at car park. Contact **BEAG**.

7 Sunday 9.30am–12.30pm

 **Forest Treasure Hunt** at Baldy's Children's Forest. Learn to use a GPS, navigate to find clues and solve the puzzle. Includes morning tea and sausage sizzle lunch. Suitable 8+ years. Cost \$10 adult, \$5 child. Contact **BCF**.


7 Sunday 10am

 **Fungi Foray** near Mundaring with PUBF and WA Naturalists' Club (Darling Range Branch). To book email fungi@inet.net.au.

9 Tuesday 8pm

 **'Western Australian Sedges'** with guest speaker Dr Russell Barrett. Call **WSWA** (Perth).


11 Thursday 7.45pm

 **When is a parasite not a parasite?** Guest speaker Dr Tony Start. Call **WSWA** (Armadale).

13 Saturday and 27 Saturday June and 11 Saturday July 2pm–4.30pm

 **'Writing for the Land'** is a series of three workshops to explore your creativity based on a 'land' theme. York Rd, Greenmount. Suitable for all. Contact **BSFH**.

**20 Saturday 8am**

 **Planting.** Meet at Kent St, Bicton. Contact **BEAG**.


20 Saturday 8am

 **Guided walk** at Lake Gwelup. Call **FLG**.

20 Saturday 8am

 **Guided bird walk** (family) at Herdsman Lake Wildlife Centre. Gold coin donation. Call **WAGL**.


21 Sunday 10am–1pm

 **Planting and fungi** spotting with Friends of Warwick Bushland. Contact **FWB**.

27 Saturday 8am

 **Guided walk** at Star Swamp. Call **FSS**.

28 Sunday 10.30am

 **Guided 'fungi fossick'** at Jarrahdale. Five km easy walk. Call **JHS**.


July**4 Saturday 8am**

 **Planting.** Meet at Point Walter car park. Contact **BEAG**.

11 Saturday July 2pm–4.30pm

 **'Writing for the Land'** explore your creativity based on a 'land' theme. York Rd, Greenmount. Suitable for all. Contact **BSFH**.


12 Sunday 10am–4pm

 **Fungi Foray** at John Forrest National Park with PUBF experts. Help identify and survey fungi. Lunch provided. Participants receive a copy of the fungi field report. Contact **BSFH**.

14 Tuesday 8pm

 **'Wild Australian Tucker – Native Plants for Food Crops'**. Call **WSWA** (Perth).

15 Wednesday 10am–12 noon; 1pm–2.30pm

 **Bush Survival Skills** (morning) What to do when lost in the bush, how to collect water, fire skills and make a direction compass. Suitable 8+ years. Snake encounters (afternoon) teaches about snakes, handling and first aid. Suitable 6+ years. Bob Cooper Outback Survival. Cost per workshop \$10 adult, \$5 child. Contact **BCF**.

19 Sunday 10am–1pm

 **Bush regeneration and fungi spotting** with Friends of Warwick Bushland. Contact **FWB**.

Activities key

Hands on – bushland and wetland management activities.



Skills development activities – talks, presentations, training courses and workshops.



Walks and tours – look, listen and enjoy guided walks and excursions.



Meetings and events – group meetings, expos, festivals and conferences.

Highlights**2 Thursday–3 Friday April**

Earth Day Expo, Edith Cowan University. Email Australian Association for Environmental Education, Jennifer Pearson on j.pearson@ecu.edu.au.

3 Sunday–9 Saturday May

Australasian Cave and Karst Management Association Conference, Margaret River. Themes include innovations in karst management, planning and urbanisation in karst lands and heritage of karst. Contact the Conference Convenor Anne Wood on 9757 7035 or email anne.wood@dec.wa.gov.au.

22 Friday May

International Day for Biological Diversity. Visit www.cbd.int/ldb

5 Friday June

World Environment Day. Visit www.unep.org/wed/

5 Friday June

Arbor Day. For more information visit www.dec.wa.gov.au/schools-programs/ecoeducation/arbor-day-day-of-trees.html.

23 Sunday–27 Thursday August

2009 International Conference on Ecological Restoration: making change in a changing world, Perth. Early bird registration closes 15 May. Visit www.seri2009.com.au.

7 Wednesday–9 Friday October

Western Australian Coastal Conference, Fremantle. Contact Carolyn Jenour at Perth Region NRM 9374 3317, or Erin Wright 9374 3309 or erin.wright@water.wa.gov.au. Visit www.keynotewa.com/wacoastal2009/index.html.

27 Thursday–30 Friday October

Changing Environments – New Challenges for the Living Country Conference, Geraldton. Contact Northern Agricultural Catchments Council, Communications Officer Jackie Gill on 99649774 or 0409 886 982.

Learning opportunities**Bush Skills for the Hills for 2009**

Bush Skills for the Hills is a series of free community workshops focused on the hills environment of Perth. This program is delivered in partnership with the Eastern Hills Catchment Management Program, the shires of Kalamunda and Mundaring and the City of Swan for the benefit of the local community. The workshops are a refreshing mix of information and practical hands-on sessions (see What's On). Contact Roberta Circosta on 9424 2222 or roberta.circosta@emrc.org.au

2009 Fungi events

The WA Naturalists' Club, the Urban Bushland Council (UBC) and DEC, with the support of Lotterywest, are delighted to announce the continuation of the Perth Urban Bushland Fungi Project (PUBF) in 2009.

Fungi reports from 2008 surveys are now available on the PUBF website at www.fungiperth.org.au. Hard copies of these reports were presented to Naturalists' Club, UBC and the friends groups of the surveyed bushland. An updated and expanded Fungi of the Perth Region will be available on the

website in April. The book has a self-managed format and design enabling pages with new species or updates to be appended to hard copies of the previous edition.

All fungi walks and workshops will be held during June and July with a focus on the Perth hills. Events will be posted on the PUBF website in April/May and bookings are essential. Please contact the PUBF team (Neale Bougher, Roz Hart, Sarah deBueger and Brett Glossop) via email fungi@inet.net.au.

Please send us your regional report (150–200 words) and a photo by Friday 22 May 2009. Text may be edited in response to volume of submitted reports.

Tree deaths around Paganoni Swamp

By Leonie Stubbs

Peter Scott, working with the Tuart Health Research Group, has been researching tree deaths around Paganoni Swamp as part of a Community Conservation Grant. Peter identified armillaria as responsible for causing the tree deaths at Paganoni. A joint treatment program testing a number of compounds in Ludlow, Kings Park and Paganoni Swamp is planned for Autumn 2009.

We were relieved to learn that the tree deaths were not due to *Phytophthora multivora*, which is associated with tuart decline at Yalgorup National Park. However it does stress how vigilant we must be in forest hygiene to limit the spread of armillaria at Paganoni and in ensuring that it remains free from *P. multivora*. Bushwalkers should ensure their boots are clean and free from soil and plant material before and after each outing. Public education on the risks associated with the illegal use of motorised vehicles in our bushland is also important due to their capacity to transfer soil from one bushland to another.

For more information about Friends of Paganoni Swamp contact Leonie on 0439 921 298 or email Friends_Paganoni_Swamp@westnet.com.au. For information on volunteering opportunities with Rockingham Lakes Regional Park call 9431 6500.

Tuart survey at Trigg Bushland By Nina McLaren



(From left) Georgina Lambert, Barbara Alcock, Phyllis Robertson and Nina McLaren mapping tuarts in Trigg Bushland. Photo – Sheldon Pritchard

Trigg Bushland is one of the few larger bushland reserves (122 ha) in the inner suburbs of Perth, and is recognised for its unique dune progression from the sea to 2.2 km inland. The current objectives of the Friends of Trigg Bushland relate to research projects, protection of the bush, and community education.

Since late 2006, the Friends have been conducting a detailed survey of tuarts (*Eucalyptus gomphocephala*) in Trigg Bushland as baseline data for future population health studies. We have photographed and recorded the characteristics, condition and GPS location of each tree. The work is two-thirds complete and has turned out to be more difficult than we anticipated. Data collection and manipulation is hard work for a community group!

Our preliminary results show that while there is good regeneration of tuart seedlings, there are few 'young adult' trees – probably the result of too frequent fires. We have started to put together a fire history of Trigg Bushland, and are looking to correlate fire history with the tuart survey data.

As fire prevention appears to be essential to tuart protection, we hope to work with local and State Government to encourage the adoption of innovative measures to reduce arson. We have put up a sign in Trigg Bushland to share our findings with our local community, as well as a website www.triggbushland.org.au to reach a wider audience.

We have a weeding party the first Sunday of every month. Volunteers to join any project would be most welcome! Call Nina on 0427 936 566.

Friends of Piney Lakes increase their knowledge

By Margaret Hooker

In 2008 the Friends of Piney Lakes decided to organise some educational walks through Piney Lakes Reserve for our members and others in similar local organisations.

On 12 April, Kate Brown (DEC) presented a series of case studies on three major weeds in the reserve – *Lachenalia reflexa*, *Gladiolus caryophyllaceus* and perennial veldt grass (*Ehrharta calycina*). The studies revealed

varying results but showed Friends groups often have roles to play. Kate provided advice on weed control and the need to monitor the viability of what was proposed as it is carried out.

On 12 July, Bronwen Keighery (DEC) spoke about the flora of the Swan Coastal Plain. Piney Lakes Reserve is located on the Spearwood Dunes where they overlap the Bassendean Dunes to the east, hence the areas of wetland and upland.

We also learnt that referring to a similar bushland site is useful when planning bushland restoration to appreciate what the bush may have been like originally. Also, the benefits of any actions should be carefully weighed against the possibilities of unintended outcomes.

For more information on the Friends of Piney Lakes call Margaret Kingsbury on 9332 5186.



Dieback treatment and fire prevention in Kalamunda By Sandra Wells

For many years, Railway Reserve in Kalamunda has suffered as a result of dieback, which has resulted in the loss of natural vegetation. The reserve still contains examples of large jarrah, banksia, sheoak and grass trees that are susceptible to dieback and are in need of protection. In December 2008, Conservation Volunteers Australia (CVA), Environmental Services Officers and members from the Friends of Railway Reserve carried

out phosphite stem injections as the first step in a two-part *Phytophthora* dieback treatment strategy for the reserve.

In February 2009, CVA assisted the Shire of Kalamunda with fire prevention activities at Railway Reserve. Workers reduced fuel by removing dead wood and trees in an effort to prevent a major wildfire. Volunteers from as far away as Belgium, United Kingdom and Korea

worked alongside local residents.

CVA completes more than 2,000 conservation projects across Australia every year. To get involved freecall 1800 032 501 or visit www.conservationvolunteers.com.au. Call Sandra Wells for more information on the Kalamunda project or Andrew Soltys for more information on CVA's Better Earth program on 9227 5711.

Perth Coastal Biodiversity Project

By Craig Wilson

Greening Australia carried out an assessment of Perth metropolitan coastal vegetation and published the outcomes in *Ecological Assessment and Management of Coastal Natural Areas in the Swan Region* (2007). The report prioritised a series of areas containing high value vegetation communities for management to strengthen biodiversity values.

Perth Region NRM, through funding assistance from Coastwest and on-ground support from local government, is currently implementing the Perth Coastal Biodiversity Project. The project focuses on priority locations identified in the report for the local government areas of Joondalup, Stirling, Cambridge, Cockburn and Rockingham.

On-ground rehabilitation activities are being undertaken by a range of groups including Coastcare community volunteers, Conservation Volunteers Australia, Green Corps and TAFE Indigenous Horticultural Steppers Project. Activities include brushing, fencing, seed collection, weed control, planting, walk-trail relocation and the installation of interpretive signage. Specialised activities such as chemical weed control will be carried out by licensed controllers.

Following the completion of the project in June 2009, it is anticipated that land managers will undertake additional rehabilitation actions to complement and extend outcomes. Information gathered during the project will be used to develop web-based information brochures that can be used as educational and interpretive material for the general public and school-based activities.

For more information contact the Southern Metropolitan Coastcare Officer Craig Wilson on 9439 0433 or email craig.wilson@kwinana.wa.gov.au.

Discovering Yellagonga By Gary Tate

We have been residents of Greenwood since 1973 and for 33 of those 36 years we lived only 600 m from Yellagonga Regional Park but didn't know it existed. On the first day of my retirement in November 2005 we walked around Lake Goollelal for the very first time. So began my discovery of the biodiversity in 1,400 ha of parks and wetlands. Everyday I discover something new in Yellagonga and I record it using my camera.

My first DVD *Yellagonga Regional Park – Discover the Diversity* won the City of Wanneroo 2007 Award for Environmental Excellence – Community Achievement. I recently completed *Long Necked Turtle* and *Nankeen Kestrel* DVDs. The turtle DVD includes video footage of underwater mating behaviours and egg-laying.

One week in February showed more than 100 young swans preening at Picnic Cove in Edgewater, swimming past were a group of 50 feeding pelicans, and in the background a wide diversity of ducks.

Large numbers of egrets and spoonbills feed on Lake Joondalup. Stilts and glossy ibis were starting to arrive. Rainbow bee-eater babies were fledging from their burrows in the sand and blue wren chicks were fluttering about. I watched nesting Australasian grebes cover their eggs with weed when leaving the nest. A willy wagtail fell off its perch, dead into the water, to be consumed by a long-necked turtle. Marri, jarrah, jacksonia and *Dichopogan capillipes* were all flowering and dianella was setting seed. Throughout the year this *Chain of Diamonds – Kings Park of the North* has something to offer everyone. Sure beats working!

The Friends of Yellagonga work in their nursery every Saturday to propagate endemic seedlings for planting in the park. For more information on the DVDs or Friends group activities call Gary on 9342 4685 or visit www.yellagonga.org.



Picnic Cove at Yellagonga Regional Park. Photo – Gary Tate

Metropolitan Regional Rabbit Control Program update

By Kate Sputore

In 2008, Perth Region NRM (formerly Swan Catchment Council) funded the Metropolitan Regional Rabbit Control Program. The aim of the program was to target the population of wild rabbits living in the coastal reserves of eight local governments from Wanneroo to Kwinana. These rabbits are responsible for the destruction of valuable native coastal vegetation and are recognised as a significant threat to our plant and animal communities.

This successful multi-jurisdictional rabbit control program utilised methods including baiting and warren fumigation. An extensive monitoring program carried out at 45 sites concluded an overall average of 92 per cent reduction in rabbit numbers occurred across the metropolitan coastal reserves, with significant anecdotal evidence indicating a reduction in rabbit activity at many important community Coastcare rehabilitation sites.

The program was conducted according to methods of rabbit control approved by the Department of Agriculture and Food, using licensed contractors and deemed suitable to each particular area of coastal reserve.

Particular attention was paid to native animal populations and land usage, to ensure risk to other animals and users would be negligible.

It is well recognised that any rabbit control program requires a coordinated and cooperative approach from land managers to ensure long-term success. Further funding is being sought to continue this program into the future and to improve community education relating to this serious ecological threat.

For more information call the Northern Metropolitan Coastcare Officer Kate Sputore on 9285 5099.



Una Bell (author and local volunteer) at the launch of her field guide *Common Native Grasses of South-West WA*. Photo – Toni Burbidge (See Resources)

Friends of Piesse Brook



By Linda Stanley

The Friends of Piesse Brook group continues to expand its work eradicating weeds along Piesse Brook inside Mundy National Park (See Bushland News 67 p.9). New weeds targeted this year include papyrus and polygala – believed to be washed down from properties upstream.

Seventeen private land owners with Piesse Brook flowing through their properties

continue their involvement in the project to remove weeds and revegetate their properties. The Friends group is delighted to have its message spreading and are now finding that landowners are approaching the group with requests to take part.

For more information visit www.friendsofpiessebrook.org.au or email linda@johnstanley.cc.

Funding opportunities

2009 Grants Directory

The grants directory available at www.grantsdirectory.dlgrd.wa.gov.au/ is a compilation of grants and other assistance programs available to communities and local governments in regional and metropolitan WA.

Healthy Wetland Habitats program

Healthy Wetland Habitats is a voluntary program for private landholders on the Swan Coastal Plain whose property contains a wetland, and who would like to manage the wetland for long-term conservation.

The program is an initiative of the State Government and is administered by DEC. It helps landholders develop a wetland management plan to identify actions, such as fencing and weed control, which will preserve the wetland's biodiversity values. Funding of \$10,000 is available to landholders to carry out actions identified in the plan. Landholders with an existing management plan may also apply.

For more information contact DEC's Healthy Wetland Habitats Coordinator Edwina Davies-Ward on 9334 0570 or Edwina.DaviesWard@dec.wa.gov.au. Visit www.dec.wa.gov.au/management-and-protection/wetlands/healthy-wetland-habitats.html.

Environmental Community Grants 2009

The State Government has allocated \$1.53 million in grants to help communities and individuals with projects involving biodiversity conservation; sustainable catchment management; rescue and rehabilitation of injured or incapacitated fauna; nature appreciation in natural areas; regional parks and Bush Forever sites; support for major conservation/environmental organisations; and protection of high-value areas by landholders on private land.

Grants of \$500–\$30,000 are available for projects in the 2009-10 financial year. Community groups, incorporated not-for-profit organisations and local governments may apply. For more information call 9334 0455, email grants@dec.wa.gov.au or visit www.dec.wa.gov.au/community-and-education/community-programs/environmental-community-grants-2009.html. Applications close Friday 1 May 2009.

Better Earth funding – Conservation Volunteers Australia (CVA)

CVA volunteer teams undertake a wide variety of on-ground projects designed to observe, preserve, protect or restore WA's natural environment, indigenous or historical cultural heritage. CVA has recently secured 'Better Earth' funding allowing subsidies on a range of new 'Managed Volunteer Projects'. The 'Better Earth' program is also valuable for schools, community and Friends groups looking to undertake conservation or heritage activities. For more information contact Andrew Soltys on 9227 5711 or email perth@conservationvolunteers.com.au.

GROUPPROFILE:

Seventy years of 'nurturing a passion for nature'



By Roger Harris

Originally founded in Victoria in 1909 to protect birds and their eggs, the Gould League is one of Australia's most respected and influential nature conservation education groups. The Western Australian Gould League (WAGL) formed in 1939 and is celebrating its seventieth anniversary of 'nurturing a passion for nature'. Based at Herdsman Lake Wildlife Centre, the environmental education programs provided by the WAGL attract more than 10,000 students annually.

More than a million young Australians have joined the Gould League since it was founded, and countless members have gone on to pursue distinguished careers in conservation. Members of the WA faction include prominent naturalist Harry Butler, famous for his ground breaking 1970's ABC-TV program *In the Wild with Harry Butler*. Other well-known naturalists include Eric McCrumb, whose distinguished career as an environmental educator earned him an Order of Australia, and Professor Kevin Kenneally AM, award-winning DEC botanist and current WAGL President.

The WAGL is a non-profit organisation that manages the Herdsman Lake Wildlife Centre within Herdsman Lake Regional Park. The Department of Education and Training sponsor two staff positions. As the Centre Manager, I am responsible for promoting WAGL, developing and coordinating environmental education programs, and for raising awareness of the State's flora, fauna and wildlife conservation.

Frequent reviews of the WAGL's environmental education experiences are aimed at keeping pace with current educational initiatives and priorities. In 2003, to meet National and State priorities in Aboriginal education, WAGL launched its Indigenous Education Program in partnership with Yelakitj Moort Nyungar Association Inc. With more than 3,500 students taking part in this program annually, WAGL is now the leading provider of Indigenous education to schools in the Perth metropolitan area.

National and State education priorities (The WA Curriculum Framework) recognise that the beliefs we hold play an important part in our decision-making and determine our values. We express our values in the way we think and core values underpin and



Roger Harris shares his knowledge of Herdsman Lake with students from Atwell Primary School. Photo – WA Gould League

shape current school curriculum, including the value of 'environmental responsibility'.

The philosophy behind the WAGL education programs at Herdsman Lake is to provide 'values centred' activities. My target in education is the heart not the head! I am more interested in the whole person. What motivates them? What do they value? Then I share with them my own passion for nature and lead them through a shared journey and experience so they have an opportunity to experience that passion – that is how you create lifelong learners passionate about nature!

WAGL was recognised for the quality of its learning experiences when it won the 2007 Premier's Science Awards: Premier's Prize for Excellence in Science Communication Outside the Classroom.

Become involved

Herdsman Lake is located in the City of Stirling approximately six km north-west of Perth City. It was declared a Regional Park in 1999 and covers an area of 300 ha. In summer most of the lake is dry, but dredging of the lake perimeter maintains some permanent open water (15 per cent of the area). Although almost 80 per cent of the lake is covered with introduced bullrush (*Typha orientalis*), the lake provides a haven for wildlife and is a significant bird breeding area.

Herdsman Lake Wildlife Centre: For details of the **WA Gould League** environmental or Indigenous education programs, teacher training and resources, and community activities visit www.wagouldleague.com.au, phone 9387 6079 or email roger@wagouldleague.com.au.

DEC manages the Herdsman Lake Regional Park in collaboration with the City of Stirling. Contact Tarnya Irving at DEC on 9431 6500 to find out more about volunteering in the park.

The '**Art of Living Foundation**' volunteers carry out revegetation, rehabilitation and weeding work within Herdsman Lake Regional Park. Contact Samantha 0404 665 788.



Left: Western green tree frog (*Litoria moorei*) at Herdsman Lake.
Right: Rufous night heron (*Nycticorax caledonicus*) at Herdsman Lake.
Photos – Roger Harris

Resources

Publications

Common Native Grasses of South-west WA

(2008) Una Bell. This publication contains more than 40 species of native grasses local to the Eastern Hills area and is a significant contribution to any botanical field guide reference library. Learning to recognise native grasses is challenging but essential for anyone involved in landcare. It is published by Una Bell with assistance from the Shire of Mundaring, Western Australian Herbarium and Lotterywest. Copies are available from Shire of Mundaring Bushcare Coordinator Alison Dugand on 9290 6666.



Rescuing the Rangelands

(2008) Tony Brandis. DEC, Perth. 246 pages. RRP \$29.95. The degradation of the natural ecosystems of WA rangelands as a result of increased grazing pressure during the past 150 years has raised serious concerns. This book evaluates the theoretical principles of reserve system establishment and describes a pragmatic approach that addresses the real-world political, economic, and social issues which need to be considered before a comprehensive, adequate and representative conservation reserve system can be established.



Website watch

The introduced flora of Australia and its weed status

- Rod Randall. An invaluable resource to everyone who cares about the Australian environment and wishes to ensure that the plants chosen for revegetation projects, landscaping and gardens are not likely to become weedy and a threat to our bushland. Every introduced plant species, past and present, is listed in this publication with information on weed status here and worldwide. The book and database is available at www.weedsrc.org.au/publications/index.html.

ConnectGroups website has information sheets designed to help your group operate effectively – roles, responsibilities, meetings, media and group dynamics. Visit www.connectgroups.org.au/further-information/gd-resources/.

Southwest Australia Ecoregion: Jewel of the Australian Continent

is a 32-page booklet on the region's biodiversity, threats to conservation and future management initiatives. Visit www.wwf.org.au/publications/southwest-australia-ecoregion-jewel-booklet/.

Alcoa Frog Watch program website.

This site won 'Best Government' and the 'Most Outstanding WA Website' at the 2008 WA Web Awards. Visit frogwatch.museum.wa.gov.au.



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