

Managing trail bikes – a collaborative approach

Issue 81

Autumn 2012

Time of Djera and Makuru in the Nyoongar calendar.

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Perth has seen rapid growth in the use of trail and quad bikes over the past decade. While advocates for the activity point to the important physical and social benefits, local government and land managers are experiencing issues with trail bikes, especially where they impact on residential or conservation areas.

The issue is not new. As far back as 1978 the (Charles) Court Government introduced legislation to prohibit the use of non-road registered vehicles on public land while at the same time creating gazetted Off Road Vehicle areas where families could enjoy the experience of off-road riding.

Sadly, little or no attention was ever paid to the Off Road Vehicle Areas after that and many of these areas were subsequently closed down by risk-averse local councils. To address the issues, the Department of Environment and Conservation (DEC) has reached out to trail bike riders, primarily through a strengthening relationship with representative peak trail bike groups.

The thinking is that the activity is going to occur anyway so the best option is to plan for and at least partly manage the activity. The Recreational Trailbike Riders' Association WA (RTRA) recognises that the only way to ensure a future for trail bike riding is for riders to understand and help reduce the environmental impacts.

One strategy is to draw riders away from environmentally sensitive areas by making the existing gazetted Off Road Vehicle Areas more attractive. Early results from the



Terry Waldren (Minister for Sport and Recreation) (from left), Steve Pretzel (Recreational Trailbike Riders Association), Tony Simpson (MLA Darling Range), Paul Miles (MLA Wanneroo) and Mike Meinema (DEC Swan Coastal District Manager) inspecting works at the Pinjar Off Road Vehicle Area near Wanneroo in August 2011. Photo – Kathleen Lowry

redevelopment of the Pinjar Off Road Vehicle Area near Wanneroo are very encouraging.

Over the past 12 months five separate trails totalling around 15 km have been created in the 200 ha pine plantation. A short 'PeeWee' trail, surfaced with limestone and clay, suits the youngest riders and is adjacent to a new car park so parents can keep a close eye on riders. Nearby a 6 km 'Family' trail has been built and the area also has more challenging trails for experienced riders.

Rider feedback is positive and the number of riders using the facility is increasing, indicating that the objective of attracting riders to the area is being met. Pinjar is a model that can be used to redevelop other existing Off Road Vehicle Areas and to develop new ones for the future.

Another strategy is educating the adult riders of tomorrow, and Motorcycling WA, together with the Department of Sport

and Recreation, is introducing a juniors program called 'Minikhana'. The juniors program aims to build up skill levels, confidence and awareness in young riders as they move into other motorcycle sports.

DEC, RTRA and Motorcycling WA are working to align the objectives of conservationists and riders by encouraging trail bike riders to help protect and preserve the environment for the sustainable future of their activity. No one is expecting the situation to change overnight, however all involved share a new optimism that the collaborative approach will help get trail bikes 'back on track'.

For more information please contact:

DEC: Ewen MacGregor on ewen.macgregor@dec.wa.gov.au

RTRA: Steve Pretzel on steve@rtra.asn.au or visit www.rtra.asn.au

Motorcycling WA: Rick Gill on rgill@motorcyclingwa.org.au or visit www.motorcyclingwa.org.au.

Restoration at Anstey-Keane Damplands *by Julia Cullity*

Last year Urban Nature convened the Anstey-Keane Management Group to initiate restoration actions to conserve this large mosaic of wetlands and banksia woodlands in Forrestdale. With representatives from the Friends of Forrestdale, DEC, Western Australian Planning Commission, Western Power, Water Corporation and the City of Armadale, the group aims to bring together the major stakeholders for the public lands in this Bush Forever site and establish collaborative bushland management.

The Anstey-Keane Damplands are recognised as having intact bushland in excellent condition, a remarkably high number of native plant species and threatened species. Significant plant and animal species include Purdie's donkey orchid (*Diuris purdiei*) and the megamouth bee (*Leioproctus* sp.) – a new species discovered there in 2010. Threatened ecological communities are also present, associated with the plant communities of the clay-based seasonal wetlands.

The Anstey-Keane Management Group has begun working on major threats. Options for boundary fencing, heavy-duty gate

design, fence maintenance and cross-agency blitzes have been discussed to reduce the impact of unauthorised motor vehicles. Weed mapping by the Friends of Forrestdale and Urban Nature took place across the 260 ha of public land for 13 priority weeds. The resulting weed action plan has been endorsed by the group and commitment and funding for all priority management actions have been agreed upon. Works begin this winter/spring.



Jim Prince from the Friends of Forrestdale maps weeds using a hand-held computer and differential GPS. Photo – Julia Cullity



Regina Drummond was the proud recipient of the Western Australian Environment Award – Rivers, Estuaries and Wetlands. For the past 23 years Regina has cared for our environment, in particular the Brixton Street Wetlands. Photo – Ruth Clark

Fire and Biodiversity Conference

DEC officers and research scientists will present recent studies on fire and the implications for biodiversity on the Swan Coastal Plain, Darling Scarp and Plateau. Bushland managers are invited to attend Monday 11 June 2012, 9am–5pm WA Conservation Science Centre, Kensington. RSVP 9423 2900 or email daniella.miernik@dec.wa.gov.au

2012 Great Cocky Count *By Tamara Kabat*

The Great Cocky Count (GCC) is held each year to record as many Carnaby's cockatoos (*Calyptorhynchus latirostris*) as possible on a single night. This year, the GCC is happening on **Sunday April 15 from 5.25pm–6.25pm**. It is a very easy survey, as you just need to count the Carnaby's cockatoos flying into their night-time roosting tree at a single location. We are also asking the public to tell us about any night roosts they find for any black cockatoos. The 2011 GCC report has shown a 37 per cent decrease in the number of Carnaby's cockatoos counted at night roosts in the Swan Region. Repeat counts over successive years are critical and

the methodology is robust enough to define population trends when enough counts have been done.

In January 2012, Birds Australia and Bird Observation and Conservation Australia merged to become a single organisation called BirdLife Australia. To become a volunteer or to report a roost site please contact Tamara from BirdLife Australia on 9287 2204 or 0457 333 177 or tamara.kabat@birdlife.org.au. For more information about BirdLife Australia's Carnaby's Black-Cockatoo Recovery Project and the 2011 GCC report visit www.birdlife.org.au/projects/carnabys.

Contacts

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

Winter Bushland News

Winter *Bushland News* contributions should be sent to Urban Nature at urban.nature@dec.wa.gov.au by **Thursday 24 May 2012**. *Bushland News* seeks original contributions. If your submission has been or may be published elsewhere please let us know. Compiled and edited by Jo Tregonning.

Couch grasses by Julia Cullity

The attributes that make couch grasses suitable as hard-wearing, fast-growing turf enable them to be aggressive invaders of natural areas.

Couch grass (*Cynodon dactylon*) is a soft, green, water-hungry summer lawn. It is also a serious weed of wetlands and waterways in Western Australia and is among the 30 highest priority weed species in the Swan NRM region. Salt water couch (*Paspalum vaginatum*) is a similar species marketed as the turf grass 'Velvetene' or as a salt-resistant pasture. It is also an environmental weed of estuaries from Geraldton to Albany, saline creeks in the wheatbelt and the tropical north. Native marine couch (*Sporobolus virginicus*) is often found co-occurring with couch in wetlands, salt flats, coastal and estuarine sites.

Couch

A perennial mat-forming grass, couch grows in open, sunlit sites subject to disturbances such as grazing, fires or flooding. It will grow well in sandy, loamy or clay soils, is tolerant to a wide range of pH and salinity and prefers moist sites with warm temperatures. Its growth is slowed by shade, cold and dry soil. Laboratory trials for couch have demonstrated allelopathy (i.e. exudes chemicals from its roots and leaves which decrease the germination and growth of other plant species). Couch spreads both by seed and vegetative growth as stolons and rhizomes (runners above and below the ground). Rhizomes can grow to depths of 60 cm below ground which makes it relatively tolerant to drought and waterlogging and enables it to survive most fires by resprouting. A summer active grass, it flowers in south-west WA from December–February and is dormant June–August.

Salt water couch

A perennial mat-forming grass, salt water couch grows in coastal, estuarine and moist saline environments. It invades bare soils and can form dense swards which out-compete other species for many years, reducing habitat for shorebirds and fish and affecting water flow and sedimentation patterns. It will grow in sand and mud flats and will tolerate saline or fresh water, a range of pH, flooding, drought and low light. It has a higher tolerance to salinity than couch.



The flower spike is the most characteristic feature in identifying couch grasses. Couch's (*Cynodon dactylon*) flower (A) is made up of 2–7 branches which radiate out from the top of the stem like the fingers of a hand. Saltwater couch (*Paspalum vaginatum*) (C) has two branches (rarely more) that open on maturity to a V-shaped seedhead. Both are easily confused with the native marine couch (*Sporobolus virginicus*) (B) which is often found co-occurring with the weedy couch. It is distinguished by the single grey, broadly cylindrical flower-spike held at the top of its stem, which often persists after flowering. Images – Urban Nature

Salt water couch is a summer-active grass, flowering in south-west WA from November–April and dormant in June–August. It is a problem species in suitable habitats including mangroves in other parts of Australia and the world, including New Zealand, Hawaii, Ecuador and southern Africa.

Management

Control of couch grasses should be carried out in the warmer months when couch and salt water couch are green and actively growing. Repeated follow-up is required to control all the underground rhizomes. Small infestations can be dug out taking care to remove all roots and root fragments, however the area will need to be checked in 4–6 weeks for surviving fragments. Small couch plants and those beginning new growth can be sprayed with the grass selective herbicide Fusilade Forte® at 8m/L plus wetting agent. Couch and salt water couch can be sprayed with the broad spectrum herbicide glyphosate at 1%

with repeat follow-ups within that growing season. In sensitive areas carefully paint runners with 50% Glyphosate. Couch is difficult to manage with herbicide in wetlands as the growing season can coincide with standing water. Careful observation of wet/dry cycles, summer rains or regrowth following fire will identify opportunities to apply herbicide to active growth in dry soils.

More information

Bell, U (2004) *Native Grasses in the Perth Region*. Una Bell, Mundaring.

Cynodon dactylon Visit www.florabase.dec.wa.gov.au/browse/profile/283.

Keighery, G J and Bettink, K (2008) Environmental weed census and prioritisation, Swan NRM Region July 2008 SCC and DEC report. Available at www.dec.wa.gov.au/content/view/5894/2327/.

Paspalum vaginatum Visit www.florabase.dec.wa.gov.au/browse/profile/533.

Bats in our backyard

By Joanna Burgar

"A bat is beautifully soft and silky; I do not know any creature that is pleasanter to the touch or is more grateful for caressings, if offered in the right spirit." Mark Twain

Perth may not resemble Gotham City, but it has its fair share of bats. These nocturnal and cryptic mammals are easy to miss, so some might find it surprising that the greater Perth area is home to nine species of insectivorous tree-dwelling microbats. Most of the microbat species listed in Table 1 are widespread throughout Australia, although two species are restricted to south-western WA – the western false pipistrelle (priority 4 conservation status) and the western long-eared bat. The few records of little red flying-foxes south of the Swan River were likely vagrants, as flying-fox camps do not occur in Perth and are more typically found north of Shark Bay.

Table 1: Bats of the Perth region

Common name	Species name
white-striped freetail bat	<i>Tadarida australis</i>
southern freetail bat	<i>Mormopterus sp 4, undescribed, var. western</i>
Gould's wattled bat	<i>Chalinolobus gouldii</i>
chocolate wattled bat	<i>Chalinolobus morio</i>
western false pipistrelle	<i>Falsistrellus mackenziei</i>
lesser long-eared bat	<i>Nyctophilus geoffroyi</i>
Gould's long-eared bat	<i>Nyctophilus gouldi</i>
western long-eared bat	<i>Nyctophilus major</i>
southern forest bat	<i>Vespadelus regulus</i>
little red flying-fox	<i>Pteropus scapulatus</i>

Echolocation

Contrary to popular belief, microbats are not blind but use echolocation to navigate and forage. Echolocation calls are high-frequency sound waves made by bats as they force air through their vocal cords, creating sound impulses that are sent out through either the mouth or the nostrils and then bounce back from surrounding objects. The sensitive ears of a bat detect the echoes, which the brain then converts into information about the size, texture and distance of the object.

The unmistakable call of the white-striped freetail bat is commonly heard in greater Perth. The call sounds like a metallic 'ting', often heard after dusk and high overhead. With an echolocation call ranging from 10–15 kHz, it is the only bat in Perth with a call audible to human ears. The white-striped freetail bat is also the largest microbat in the city although it weighs slightly less than a golf



Above: Western long-eared bat (*Nyctophilus timoriensis timoriensis*) is one of two bats that are restricted to the south-west of WA.

Left: Southern forest bats (*Vespadelus regulus*) fly off into the night following the recording of biological data.

Photos – Jesse Young

ball. Comparatively, Perth's smallest bat is the southern forest bat, weighing slightly less than a \$2 coin.

Disease vectors

Due to their enigmatic nature, bats are often misunderstood and misconstrued as being disease ridden. Australian bats have a low prevalence and transmission rate of disease. In Australia, there have been seven cases of the Hendra virus and two of the Australian bat lyssavirus (ABLV). Hendra virus has only been transmitted from flying-foxes to horses and then to humans while ABLV can be transmitted by either flying-foxes or microbats. Although no transmission of either disease has occurred in WA, only people vaccinated against rabies should handle bats due to the severity if contracted. Anyone bitten or scratched should seek medical counsel.

Diet

Another misconception is that bats suck blood. Three species of vampire bats do feed on blood, but they are restricted to the tropical Americas. Perth's insectivorous bats are important for keeping invertebrate populations

in check. Bats can easily consume up to half their own body weight in a nightly foraging bout. Although diets vary depending on the species, Perth's bats predominantly eat prey from the orders moths, flies, beetles, true bugs and cicadas, crickets and even the occasional spider. The diet of the chocolate wattled bat includes pest species such as cabbage moths (*Hellula hydralis*) and apple loopers (*Phrissogonus laticstata*), known to affect Margaret River vineyards, while the southern forest bat eats mosquitoes.

The benefit of these fascinating creatures far outweighs any negatives. One great way to improve the abundance of bats in your backyard is to put up a bat box. To build your own bat box visit: www.gobatty.com.au/build-your-own-bat-box/.

More information

Contact Joanna Burgar (PhD Candidate, Murdoch University) at J.Burgar@murdoch.edu.au.

www.climatewatch.org.au/species/mammals/white-striped-bat

TurtleWatch By Elaine Lewis and Vicky Hartill



This oblong turtle (*Chelodina oblonga*) was observed nesting near Canning River Eco Education Centre and was reported by a citizen scientist. Photo – Elaine Vesperman

Oblong turtles (*Chelodina oblonga*) inhabit the wetlands of the Perth metropolitan area. Their wellbeing is of increasing concern to the community in relation to habitat loss, road deaths, predation and climate change. TurtleWatch began with concerned residents in the City of Stirling seeking to provide suitable nesting sites. Predation was an important limiting factor in that project, so a second TurtleWatch program is underway.

TurtleWatch 2 aims to identify predator/s involved in the destruction of nests at Herdsman Lake, Bibra Lake and Canning River. Camera surveillance has shown evidence of fox predation. We also aim to foster conservation partnerships between the community, research, educational institutions and industry. We have held six community education sessions at eco-centres with publicity and resources spreading the word.

Community members can help by reporting oblong turtle sightings. Visit www.climatewatch.org.au/species/reptiles/oblong-turtle or phone: Cockburn Wetlands Education Centre on 9417 8460, Canning River Eco Education Centre on 9461 7160, Herdsman Lake Wildlife Centre on 9387 6079, South East Regional Council for Urban Landcare on 9458 5664.

TurtleWatch is funded by Lotterywest and has in-kind support from the Australian Association for Environmental Education, partner local governments and community landcare. New partnerships have been created for TurtleWatch 2 with ClimateWatch, Murdoch University, The University of Western Australia and the Turtle Oblong Rescue and Rehabilitation Network.

Studies in the Helena River Catchment

By Renee D'Herville

In 2010 and 2011 a survey of freshwater fish was undertaken by the Eastern Metropolitan Regional Council (EMRC), Swan River Trust (SRT) and Wetland Resource Management (WRM) in the Helena River Catchment. Five native species were found in the catchment which included western minnow (*Galaxias occidentalis*), western pigmy perch (*Nannoperca vittata*), nightfish (*Bostockia porosa*), freshwater cobbler (*Tandanus bostoki*) and Swan River goby (*Pseudogobius olorum*).

The biggest threat to Helena River fish is low dissolved oxygen and this was found in the lower and middle Helena. Environmental flows will help improve water quality by increasing water volume and minimising accumulated organic matter and nutrients.

Another major threat to the native fish is the competition and predation from exotic fish species including mosquitofish (**Gambusia holbrooki*), redfin perch (**Perca fluviatilis*) and goldfish (**Carassius auratus*).

To complement the baseline data, SRT and EMRC are conducting summer monitoring and sampling of 10 pools, upstream and downstream of Pipehead Dam. The monitoring includes electrical conductivity, dissolved oxygen, pH and temperature. WRM will also be conducting fish biota studies within this section of the catchment at the end of February. These studies aim to determine appropriate flow rates to ensure a healthier environment for freshwater fauna.

For more information email Renee at Renee.DHerville@emrc.org.au.

Broadcasting seed in Blue Wren Reserve

By Sandy Stone

Blue Wren Reserve is a 13 ha reserve in the Shire of Mundaring and is managed by a seven-member strong Friends group. For the past 11 years the Friends have been regenerating the marginal bushland areas using seed. Broadcasting seed has been very successful in increasing biodiversity, reducing costs (no plant guards) and reducing vandalism.

The area to be broadcast must be weed free and in some cases it has taken the Friends two or more years to achieve this goal. The best time to broadcast the seed is after the first decent winter rains. This used to be in May but in the past two or three years it has been June–July. Broadcasting after the first rains helps to minimise seed loss (due to less ant movement).

The Eastern Hills Wildflower Society provides us with local native seed. Pre-treatment of the seed was a bit of a mystery to me, so I heat treated them all by placing small amounts of seed mixtures in old nylon stockings for 30 seconds. This was done immediately prior to broadcasting, so the seeds wouldn't germinate before planting or grow mildew. Over the years we have become more adventurous in the diversity of species we broadcast. Appendix 1 in *Australian Seeds – A Guide to their Collection, Identification and Biology* (2006) edited by L Sweedman and D Merritt is a great resource.

It is a good idea to break up the soil with a fork or metal rake just prior to broadcasting. We have found damp river sand to be a good medium to mix with the pre-treated seeds so you can distribute seed evenly and thinly. We mix in a wheelbarrow with a big shovel. Rake the sand and seed over the area to be re-vegetated and erect a rabbit-proof fence. Remove small weeds as they appear and make sure contractors know not to spray the area with herbicide. Sometimes seedlings do not germinate following the first winter but stay dormant until more suitable conditions occur. We have even seen it take two winter seasons before the majority of seed has germinated.

For more information email Sandy at sandyroger.stone@gmail.com.

what's on

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

Recurrent activities

-  **Saturdays**
Bushcare activities with the **Mt Henry** Conservation Group are on the fourth Saturday of each month. Email Jan.King@acquinas.wa.edu.au
-  **Saturdays 8am-9am**
Guided walks with Friends of **Koondoola**. Second Saturday of the month. Meet at Gate 2, corner of Koondoola and Burbridge Ave.
-  **Saturdays 8am-9am**
Guided walks and meeting with Friends of **Landsdale**. First Saturday of the month. Meet at third gate Landsdale Rd, east of Landsdale Farm School, Darch.
- Saturdays 9am**
Bushcare activities with the Friends of **Brixton Street** Wetlands are on the third Saturday of each month. Call Regina 9459 2964.
-  **Saturdays, Sundays 9am-12 noon**
Koala maintenance at **Yanchep** National Park. Call Ciara 9405 0771.
-  **Sundays 8.30am-9.30am**
Guided walks and meeting with Friends of **Mirrabooka**. First Sunday of the month. Call Jan 9344 2872.
-  **Sundays 8am-9am**
Guided walks with Friends of **Marangaroo**. Fourth Sunday of the month. Meet at Gate 3, Decourcy Way.
-  **Sundays 8am-10am**
Bushcare activities every Sunday with the Friends of **Shenton Park** Bushland. Contact Dani 9381 3470 or bojel@iinet.net.au.
-  **Sundays 8.30am**
Bushcare activities with the Friends of **Wireless Hill** are on the second and fourth Sunday of each month. Meet at main carpark. Contact Margaret 0402 105 649 or s3mmatthews@hotmail.com.
-  **Sundays 9am-11am**
Bushcare activities with **Cottesloe** Coastcare are on the first Sunday of each month. Visit www.cottesloecoastcare.org for details or contact Robyn on 9384 7668 or info@cottesloecoastcare.org.

-  **Sundays 9am-10.30am**
Bushcare activities at Throssell Reserve, **Eastern Hills** in the Jane Brook Catchment are on the second Sunday of each month. Call Una Bell 9572 1447.
-  **Sundays 9.45am-12 noon**
Bushcare activities with the Friends of **Piesse Brook** are on the third Sunday of each month. Contact Gerry Brown 9293 2517, Bridgett Hogarth bhogarth@ozemail.com.au, linda@johnstanley.cc or visit www.friendsofpiessebrook.org.au.
-  **Sundays 9am-12 noon**
Bushcare activities with the Friends of the **Spectacles** (Kwinana) are on the third Sunday of each month. Contact Lynda Smith on 9439 1928 or outback3@iinet.net.au.
-  **Mondays 8.30am-10am**
Bushcare activities with the Friends of **Mary Carroll Lake** (Gosnells). Volunteers also work the fourth weekend of each month. Contact Unice 9398 7126 or unicerobinson@gmail.com.
-  **Mondays, Wednesdays, Fridays 9am-12 noon**
Bushcare activities and **wetlands walk trail maintenance** with **Yanchep** National Park Volunteers. Call Ciara 9405 0771.
-  **Thursdays 8am-9am**
Bushcare activities every Thursday with **Byford** Enviro-Link. Call Johanne Garvey or Kristy Gregory 9526 0199.
-  **Thursdays 9am-2pm**
Bushcare activities in **Margaret River** with the Capes Volunteer Team. Call 9757 2202.
-  **Conservation Volunteers activity schedule**. Free one-day local activities or overnight country trips. Call Jodi 9335 2777 or visit www.conservationvolunteers.com.au.
-  **Guided walks** with trained guides from the Friends of **Bold Park** Bushland, Floreat. 9am on first Saturday, second Thursday and third Sunday of each month. For details 9480 3996, or www.bgpa.wa.gov.au/bold-park/walks or friendsbp@bgpa.wa.gov.au.

-  **Research into bird populations** with the **Herdsmen Lake** Bird Banding Group. Call Bill Rutherford (ABBBS Coordinator) 0438 910 252.

April

-  **1 Sunday 7am-9.30am**
Mornin' Song bird walk in Beelu National Park, Mundaring. Includes morning tea. \$20 pp. Age 10+ Bookings 9295 2244.
-  **13 Friday 7.30pm**
Soil fauna and vegetation relationships with guest speaker Natasha Pauli. Contact **WA Nats(DR)**.
-  **13 Friday 7.30pm**
Biological surveys in Sri Lanka with guest speaker Ric Howe. Contact **WA Nats(P)**.
-  **14 Saturday 8.30am**
Work day with the **Canning River** Regional Park Volunteers. Contact **CRPPV**.
-  **15 Sunday 5.25pm-6.25pm**
Great Cocky Count with BirdLife Australia. Email Tamara tamara.kabat@birdlife.org.au to register.
-  **20 Friday 7.30pm**
Endangered fauna with guest speaker Leonie Ballantyne. Contact **WA Nats(KRM)**.
-  **22 Sunday 8.30am-10am**
Bushcare activities with the Friends of **Mary Carroll Lake** (Gosnells). Contact Unice 9398 7126 or unicerobinson@gmail.com.
-  **28 Saturday 9am**
Guided walk with the **Canning River** Regional Park Volunteers. Contact **CRPPV**.
-  **28 Saturday 9am-12 noon**
Bushcare basics - safety workshop for volunteers working in bushland areas. Gooseberry Hill. Contact **BSH**.
-  **29 Sunday 10am-12 noon**
Dinosaur Dig family event at Baldyvis Children's Forest. Contact **BCF**.

May

-  **4 Friday 7.30pm**
Tropical fungi with guest speaker Matt Barrett. Contact **WA Nats(P)**.
-  **5 Saturday 8.30am**
Work day with the **Canning River** Regional Park Volunteers. Contact **CRPPV**.
-  **11 Friday May 7.30pm**
Dibblers with guest speaker Tony Friend. Contact **WA Nats(DR)**.
-  **14 Monday 8.30am**
Bird walk with the Friends of **Paganoni Swamp**. Contact Leonie 9536 8195 or FoP@westnet.com.au.
-  **18 Friday 7.30pm**
Nocturnal walk with Friends of **Lake Gwelup**. Call Christine 9447 2983 or email folg@mail@inet.net.au.

-  **19 Saturday 8.30am**
Work day with the **Canning River** Regional Park Volunteers. Contact **CRPPV**.
-  **19 Saturday 7.30pm**
Guided night walk with the Friends of **Dianella** Bushland. Contact Jan 9344 2872 or bant@aapt.net.au.
-  **20 Sunday 8.30am-12 noon**
Native plant sale by the Friends of Kings Park. A rare chance to buy unusual native plants. All funds from the plant sales support worthwhile projects and research in Kings Park and Botanic Garden. Visit www.friendsofkingspark.com.au.
-  **20 Sunday 9am-12 noon**
Bushcare basics - the good, bad and ugly workshop. Gooseberry Hill. Contact **BSH**.
-  **20 Sunday 9am-12 noon**
Planting with **Wandi** Landcare and Town of Kwinana. Meet Wandi Community Centre, DeHaer Rd. Contact **ToK**.
-  **25 Friday 7.30pm**
Nocturnal walk with Friends of **Star Swamp** Bushland, North Beach. Call Christine 9447 2983 or email starswamp@hotmail.com.
-  **26 Saturday 8.30am-10am**
Bushcare activities with the Friends of **Mary Carroll Lake** (Gosnells). Contact Unice 9398 7126 or unicerobinson@gmail.com.

June

-  **8 Friday 7.30pm**
Weeds in WA with guest speaker Greg Keighery. Contact **WA Nats(P)**.
-  **8 Friday 7.30pm**
Fungi and lowly plants of Canada and **photography techniques** with guest speaker Gerhard Saueraker. Contact **WA Nats(DR)**.
-  **9 Saturday 10am-12 noon**
Native fauna after dark workshop. Gooseberry Hill. Contact **BSH**.
-  **10 Sunday 9am-12 noon**
Planting with the Friends of **Lake Claremont**. Contact Heidi 0416 614 696 or folc.wa@gmail.com.
-  **10 Sunday 9am-1pm**
Planting at **Market Garden Swamp**, Spearwood. BBQ lunch. Contact **CoC**.
-  **10 Sunday 2pm-4pm**
Blastoff - rockets and puppets family event at Baldyvis Children's Forest. Contact **BCF**.
-  **15 Friday 7.30pm**
Goodale Sanctuary with guest speaker. Contact **WA Nats(KRM)**.
-  **16 Saturday 9am**
Work day with the **Canning River** Regional Park Volunteers. Contact **CRPPV**.
- **16-30 Saturdays and Sundays 9am**
Planting with the Waterbird Conservation Group at **Folly and Maramanup Pools**, Baldyvis. Call Ruth 9339 5501 or email waterbirds@mac.com.

Registration/Contact details

- BCF Baldyvis Children's Forest**
Bookings Michelle 0405 998 598 or bookings@baldyvis-childrens-forest.com.au.
- BSH Bush Skills for the Hills**
Free community workshops. Bookings 9424 2216 or rebbekah.lamont@emrc.org.au.
- CoC City of Cockburn** Contact Linda 9411 3444 or customer@cockburn.wa.gov.au.
- CRPPV Canning River Regional Park**
Volunteers Contact Jo 9458 3669 or Pam admin@canningriver.org.au.
- ToK Town of Kwinana** community plantings. Lunch or morning tea provided. Contact Kwinana Bushcare Officer 9439 0418 or Angela.Jakob@kwinana.wa.gov.au.

- WA Nats(DR) WA Naturalists Club (Darling Range)**. CWA Hall off Central Rd Kalamunda. Email info@wanaturalists.org.au. \$2 door entry.
- WA Nats(KRM) WA Naturalists Club (Kwinana Rockingham Mandurah)** Naragebup Rockingham Regional Environment Centre, Safety Bay Rd, Peron. Email info@wanaturalists.org.au. \$2 door entry.
- WA Nats(P) WA Naturalists Club (Perth)** Hew Roberts Lecture Theatre, UWA Extension. Clifton St, Nedlands. Email info@wanaturalists.org.au. \$2 door entry.



Highlights

2011–2012 Year of the Bat

Visit www.yearofthebat.org/.

SERCUL's events calendar.

Visit www.sercul.org.au/events.html.

Wildflower Society of Western Australia events calendar. Visit <http://members.ozemail.com.au/~wildflowers/events.htm>.

7–21 April Nearer to Nature school holiday program. Visit www.dec.wa.gov.au/n2n.

22 April Earth Day 'Mobilise the Earth'.

Visit www.earthday.org/earth-day-2012.

8–9 May 3rd South Australian Weeds Conference. Visit www.wmssa.org.au/events.htm.


11 June 9am–5pm Fire and Biodiversity: recent work on the Coastal Plain and in the Perth Hills. WA Conservation Science Centre, Kensington. Contact DEC 9423 2900 or daniella.miernik@dec.wa.gov.au.

3–5 September 2012 National Landcare Conference, Sydney. Visit www.daff.gov.au/natural-resources/landcare/national_landcare_conference_-_sydney.

30 September–3 October 2012 Australian Association for Environmental Education Conference 'Creating your next Courageous Steps', Melbourne. Visit www.aeee.org.au/about/conference-2010/.

8–11 October 18th Australasian Weeds Conference 2012, Melbourne. Developing solutions to evolving weed problems. Visit www.18awc.com.

23 Saturday 9am–1pm

 **Planting at Coogee Beach** supported by Coastwest and Coastcare. BBQ lunch. Contact **CoC**.

24 June Sunday 8.30am–10am

 **Bushcare activities** with the Friends of **Mary Carroll Lake** (Gosnells). Contact Unice 9398 7126 or unicerobinson@gmail.com.

24 Sunday 9am–12 noon

 **Planting** with Medina Residents at **Chalk Hill**. Meet Beacham Cres, Medina. Contact **ToK**.

July


2 Monday 9.30am

 **Fungi walk** with the Friends of **Paganoni Swamp**. Contact Leonie 9536 8195 or FoP@westnet.com.au.

6 Friday 7.30pm

 **Relocating fauna** with guest speaker Peter Kendrick. Contact **WA Nats(P)**.

8 Sunday 9am–12 noon

 **Planting** with the Friends of **Lake Claremont**. Contact Heidi 0416 614 696 or folc.wa@gmail.com.

Please send us your July, August and September events by Thursday 24 May 2012.

Activities key



Hands on – bushland and wetland management activities.



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



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



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

Funding opportunities

Grants to Voluntary Environment, Sustainability and Heritage Organisations (GVESHO) helps eligible community-based environment, sustainability and heritage organisations to value, conserve and protect Australia's natural environment and historic heritage by assisting with their administrative funding i.e. rental, electricity, gas, phone, office supplies and equipment, staff and volunteer training, photocopying and printing costs, and travel costs incurred on behalf of the organisation. Likely to open in June and **close in July**. Contact the GVESHO Program Team on 02 6274 2422. Visit www.environment.gov.au/about/programs/gveho/index.html.

Norman Wettenhall Foundation Small Environmental Grant Scheme

supports Australian biodiversity projects that are concerned with one or more of the following: monitoring, collecting and recording data; community education; community capacity building (training); and research and science. There are four grant rounds each year. **Closes: June**. Visit www.nwf.org.au/grants/grants-conditions/.

Ian Potter Foundation Environment and Conservation program grants

support Australian urban and regional communities to live sustainably and preserve biodiversity. Small grants up to \$20,000 recognise the important role played by volunteers and environmental organisations in increasing public understanding and awareness. **Closes: 28 May 2012**. Visit <http://foundation.ianpotter.org.au/environment-amp-conservation>.

City of Melville Community Partnership Funding program is open to community organisations or individuals for innovative projects which raise awareness and take action on climate change and environmental sustainability within the City of Melville. For levels 2 and 3 grants (up to \$5,000) assessments are conducted monthly. Level 1 grants (\$5,000–\$10,000) open: 13 March. **Closes: 14 May**. Visit www.melvillecity.com.au/community/community-grants/community-partnership-funding.

City of Rockingham Community Grants funds community projects, including environmental initiatives, in the Rockingham community up to \$20,000. Funding is quarterly. **Closes: 15 June 2012**. Visit www.rockingham.wa.gov.au/Leisure-and-recreation/Grants-and-awards/Community-grants.aspx

Coastwest grants provide opportunities and resources to assist community groups and coastal managers to undertake on-ground coastal management activities, to facilitate community involvement and capacity building through the implementation of existing coastal management plans. A total of \$500,000 is available. Applications for grants of up to \$150,000 will be considered. **Likely to open May 2012**. Visit www.planning.wa.gov.au/coastwest.

Lotterywest Conservation of Natural Heritage Grants are available to not-for-profit organisations and local government authorities to conserve natural habitats and maintain the diversity of animal and plant species, e.g. planting, fencing, weed control, equipment and newsletters/pamphlets. Applications can be made at any time. Visit www.lotterywest.wa.gov.au/grants/grant-types/heritage-and-conservation/natural-heritage.

State Natural Resource Management Community Grants provides funding for community-based projects that target on-ground natural resource management action at a local level. Opens: mid-April. **Closes: mid-June**. Visit www.nrm.wa.gov.au/grants/state-nrm-program.aspx.

SJ Shire and Byford and Districts Community Bank® Branch of Bendigo Bank's Community Funding Program is available for projects such as a local entry statement, shade structures, street furniture, art in public places, picnic and barbecue facilities, memorials, playground equipment or re-vegetation. Opens: January. **Closes: 30 June**. Please discuss all proposals with the Community Development Officer on 9526 1137 prior to submitting applications. Visit www.sjshire.wa.gov.au/grant-funding/.

Learning opportunity

Fertilise wise – Fertiliser Training workshops for turf managers to learn best management practices to protect natural areas. Encourage your local turf manager to attend or come along yourself. One-day workshops (8.30am–5.00pm) will be held on: **19 June** at Piney Lakes Environmental Education Centre, **26 June** at Canning River Eco Education Centre, **29 June** at the Eastern Metropolitan Regional Council. Cost \$100. Morning tea and lunch provided. Please contact Amy Krupa on amykrupa@sercul.org.au or 9458 5664.

Please send us your regional report (150–200 words) and a photo by Thursday 24 May 2012. Text may be edited in response to volume of submitted reports.

Innovative SERCUL projects win award *By Amy Krupa*

The South East Regional Centre for Urban Landcare (SERCUL) is an independent natural resource management group that works in the southern suburbs of Perth. Since 2003 SERCUL have been bringing together the community, business and government to develop and implement projects that improve the health of our waterways and other ecosystems.

Over the past year SERCUL has been involved in some exciting projects that keep our staff and many volunteers very busy. The Urban Waterways Renewal (UWR) project focuses on the conversion of existing urban drainage lines into living streams by improving water retention and infiltration capabilities of drains and compensation basins. There are 11 sub-projects aimed at reducing nutrients and pollutants entering the Swan Canning Riverpark in the Cities of Armadale, Gosnells and Canning. There is also a comprehensive monitoring program being implemented at the UWR sites including aquatic and terrestrial macroinvertebrates, birds, mussels, vegetation and water quality.

The Freshwater Fauna Project is a partnership with Murdoch University's Freshwater Fish Group and Fish Health Unit which has produced an educational package on



SERCUL was very proud to receive the WA Environment Award for Community Achievement in November 2011. Photo – SERCUL

freshwater fauna of south-western Australia (see *Bushland News* Issue 80 p.12). Curriculum-linked education activities aimed at Years 1–10 are currently being produced and will be available later in 2012.

At the end of 2011 SERCUL were very proud to win a WA Environment Award for Community Achievement – Metropolitan for leadership, commitment and excellence in the protection of the WA metropolitan environment. This is a fantastic acknowledgment of the great team working at SERCUL and we would like to say a big thank you to all the volunteers, funding bodies and everyone else who has contributed towards making SERCUL an award-winning place.

For more information contact Amy Krupa on 9458 5664 or amykrupa@sercul.org.au or visit www.sercul.org.au.

Kangaroo exclusion and wow! *By Michelle Mullarkey*

Greening Australia, Alcoa of Australia and the South West Catchments Council recently joined forces on a restoration project on the upper regions of Oakley Brook (Murray River tributary). Thelma Crook has worked with Alcoa farmlands manager Tony Hiscock and Fairbridge to help restoration along the brook following the 2006 Australia Day fires.

Unfortunately our enduring problem has been the high kangaroo numbers and the resultant browsing. This project has included kangaroo-exclusion fencing and the results are astounding! Not only have our plantings survived and grown extremely well with no plant guards, but the natural recruitment in some areas is wonderful.

Although the kangaroo fence was expensive to fund initially, it appears it may be more cost effective. The great survival rate (so far) outweighs the alternative cost of seedlings, stakes, guards, staff and volunteer hours over consecutive years with only a small survival rate. Installation of kangaroo-exclusion fencing will enable this area and other areas with similar problems to flourish.

For more information on the Greening Australia Peel Biolinks Restoration project please call the Alcoa Landcare Education Centre on 9733 4014 or email Martin von Kaschke on martinvk@gawa.org.au.

Friends of Market Garden Swamp

By Linda Metz and Paula McLay

Market Garden Swamp (MGS) is located in Spearwood and forms part of a north-south wetland chain within Beeliar Regional Park in the City of Cockburn. It is a Bush Forever site and a natural area refuge among the urban development that surrounds it. The wetland chain has been looked after by the Friends of MGS since 2003.

Paula McLay is the coordinator and has worked tirelessly with other locals to restore biodiversity values to what was largely a degraded site with pockets of very good vegetation. Portions of this wetland have been separated physically by roads and the Friends have been working to reconnect sections.

The Friends of MGS have been working with the City of Cockburn over several years to restore native sedge beds to help reduce nutrient inflow from drains, restore habitat values and foster a sense of ownership within the community. Funding support from DEC environmental community grants has also contributed to the ongoing success of the groups work.

Local residents and other volunteers from local scout groups and Conservation Volunteers have all helped lend a hand. The biggest struggle to overcome has been weed invasion and the limestone which lies beneath the surface (not easy to plant into!).

The revegetation work will continue this year with planting activities in June and October. To join in an event contact Linda Metz, City of Cockburn on 9411 3444.



Friends of Market Garden Swamp volunteer Sue Bate (left) and coordinator Paula McLay planting sedges at Pennlake Drain, Market Garden Swamp in July 2011. Photo – Linda Metz

Waterbird Conservation Group wins award *By Ruth Clark*



Waterbird Conservation Group members and volunteers at a Folly Pool planting day with their award. Photo – Victor Talbot

Last year was another busy year for 38 volunteers and members of the Waterbird Conservation Group with the planting of almost 15,000 seedlings at Folly and Maramanup pools in Baldivis. Funding was kindly provided by DEC, the Water Corporation and the Australian Government Caring for our Country program. A number of individuals have also given generous donations to the group through the Conservation Council of WA. This has enabled the group to set up a reticulation system to make watering easier this summer.

The City of Rockingham, South East Regional Centre for Urban Landcare and Water Corporation are thanked for loaning

pottiputkis and whipper snippers and for assistance with track management slashing.

The group continues to rehabilitate parts of Canning River Regional Park with the dedication of our President Helen Barnes and the planting of thousands of native seedlings and considerable weed control. This project was sponsored by Caring for our Country program and DEC.

In October 2011 the Waterbird Conservation Group was honoured to receive the Conservation Council of WA Len Howard Community Group Conservation Award.

For more information contact Ruth on waterbirds@mac.com.

Weekly weed control at Paganoni *By Leonie Stubbs*

The Friends of Paganoni Swamp Reserve began the year with a tentative change in scheduling from monthly to weekly activities. The longer we work in the reserve the more we find to do – particularly in relation to weed control. Unfortunately ‘pepper’ ticks have been creating havoc with our volunteers; they do dampen our bushland activities!

A walk in the reserve revealed a mass of flowering Rottnest Island daisy (*Trachymene coerulea*) which was a delightful sight on a hot summer’s morning.

We have been slowly weeding out Conyza, Solanum and inkweed from the site that

underwent a prescribed burn in May 2011 and from around a number of old, large tuarts that succumbed to the fire. Most of these large tuarts had been damaged from previous fires but the loss of fauna habitat from their abundant hollows is of concern.

Brian Chambers from UWA advised that phascogales had visited five nest boxes installed in the reserve last year, with feral bees commandeering a further two. We will arrange for these hives to be destroyed because at least one of these nest boxes has previously been used by a phascogale.

For more information contact Leonie on 9536 8195 or FoP@westnet.com.au.

Armadale Gosnells Landcare Group receives annual funding



The Armadale Gosnells Landcare Group (AGLG) has received \$290,000 of funding to continue its bushland management and renewal efforts during 2012. AGLG plan to plant more than 160,000 native seedlings and spend more than \$130,000 on invasive species control. This will be the largest native bushland management project in AGLG history.

The Cities of Armadale, Gosnells and AGLG would like to thank the generous funding bodies for their support; Caring for Our Country Program, Swan River Trust, Perth Region NRM, Alcoa, DEC, SERCUL, Landcare Australia, Western Australian Planning Commission, Main Roads WA and Water Corporation.

The AGLG has planted more than a million seedlings and revegetated over 30 sites across the Armadale–Gosnells area during its 13 years of operation.

For more information contact the AGLG on 0413 883 565.



At its recent annual general meeting, the Environmental Weeds Action Network was pleased to present the Andrew Thomson Memorial Scholarship of \$5,000 to Murdoch University student Will Fowler. Carolyn Thomson-Dans (Andrew's daughter) (from left) and Margaret Thomson (Andrew's wife) presented the award on behalf of EWAN to Will Fowler. Will's honours project will research soil seed bank components, weed control and optimisation of topsoil transfer for restoration of banksia woodlands. Photo– Mike Griffiths

To bag or not to bag? By Robyn Benken

Armies of the ubiquitous green plastic plant guards pop up around the country every winter. Using plastic guards for seedlings is a practice Cottesloe Coastcare Association has explored since 1996.

The main reasons for using guards is the protection they provide seedlings from pests and trampling and, in areas with severe frosts or high winds, their ability to create a microclimate inside the guard which may aid plant growth. Rain and moisture runs down the plastic and may assist the survival rate of seedlings.

Guards are also used to 'make a statement', to show that works are going on and to delineate a revegetated area. Sometimes guards include weed-suppressing matting. Guards may also be used as a barrier to protect seedlings from chemical overspray during weed control later in spring.

Observations

Cottesloe Coastcare Association (CCA) has learnt that plant guards are sometimes required, but that weed removal followed by early winter planting gives us the best plant survival results.

At Grant Marine Park, a secondary dune in North Cottesloe, the guards provide protection from rabbits and trampling by children and dogs.

The planting of Bryan Way foredune by CCA in 2007 was protected by fencing and there was no evidence of rabbits so we did not use guards. Overall, seedling survival was excellent. The seedlings were not vandalised (plastic bags pulled out, sticks thrown around, seedlings trampled) by revellers from the pubs across the road as had been the case in previous years.

Following stormy weather overnight half of the guards at Grant Marine Park had collapsed. Quite a few seedlings had been broken and damaged by the flapping guards. CCA braved wild, wet and windy conditions for several hours to re-install guards. None of the unguarded seedlings at Bryan Way had been damaged.

At similar exposed sites where there is moving sand, an eddy of sand can be created around the base of the guard which



Kate Sputore (North Metropolitan Coastcare Officer) with a Hale School student planting at Mudurup Rocks, Cottesloe. Photo – Robyn Benken

can scour the surface of the soil and leave bare roots. I have seen seedlings and their entire root ball lying inside a guard on top of the sand, as if they were not ever planted. On other occasions the seedling has been totally buried by sand inside the guard. Of course this is why brush material or matting is required in these areas before planting, but this is not always possible.

In my experience the biggest issues are the time involved in attaching guards properly and securely in the first place, maintaining the guards until their timely removal and the added cost of guards to a planting program. Plants which are left in guards for too long can become weak, top heavy and leggy. Some mature plants seem stressed in bags and predatory organisms, e.g. snails, may find the protected plastic environment suitable habitat.

Every time CCA volunteers walk up and down dunes maintaining guards we are trampling the area further. I think that volunteers' time is better spent hand weeding or seed collecting or doing many of the other chores needed than using plant guards where they might not be absolutely necessary.

Turner and McLean (2005) studied the impact of tree guards on 20,000 seedlings planted at Bold Park during 2002–2005. They recommended avoiding the use of tree guards unless absolutely necessary (i.e. to avoid rabbit predation).

Where tree guarding is necessary, guards should be removed before late spring (before plants become too big) and the elevated temperatures of summer arrive. Alternatively, the use of non-stretchable onion bags may be a viable alternative.

Rokich and Dixon (2007) reported on the Bold Park studies which indicated unfavourable temperature conditions are produced within plastic guards during summer months. In addition, long-stemmed plants are prone to collapse after guard removal. Guard application and removal is also extremely costly and time consuming, increasing planting labour by 6-fold. Aside from rabbit protection, the use of plastic tree guards provided no other benefits to plant survival at Bold Park.

More information

Rokich, D P and Dixon K W (2007) Recent advances in restoration ecology, with a focus on the Banksia woodland and the smoke germination tool. *Australian Journal of Botany*, 55: 375–389.

Turner, S and McLean, B (2005) Optimisation of Greenstock Survival for Restoration of Bold Park. In: *Bold Park Final Report for Greenstock, Direct Seeding, Tissue Culture and Seed dormancy*. Botanic Gardens and Parks Authority, West Perth, Western Australia.

<http://cottesloecoastcare.org/dir/2007/08>

Joondalup Community Coast Care Forum *By Mike Norman*

Joondalup Community Coast Care Forum Inc (JCCCF) was formed in 2000 to undertake long-term coastal restoration and biodiversity projects along the City of Joondalup's 17 km coastline. There are currently three coastal Friends Groups under the JCCCF umbrella, working in Sorrento, Ocean Reef – Iluka and Mullaloo.

Friends of Sorrento Beach

Mike Norman coordinates the Friends of Sorrento Beach working on a 1.5 km stretch of Quindalup dunes in Sorrento (in 2011, extending to the Hillarys marina). This area was at least 80 per cent weeds. Planting, weeding and rubbish removal activities since 2000 have been very successful. During 2011, work has increased thanks to a Coastwest grant, more City of Joondalup (City) involvement and more help from corporate and community groups (some of whom have never worked in a natural area before).

Coastwest grants are funded through a partnership between the Western Australian Planning Commission and the Australian Government's *Caring for our Country*. Grant money pays for a bush regeneration contractor (under our direction) to do heavy on-ground work beyond volunteer capabilities. With our planting method of deep levering sand and four-stake wind guards, seedling survival has been better than 85 per cent in most years. So far 97 per cent of the 1,200 seedlings planted in July 2011 have survived. The manual removal of 22 weed species (using homemade specialised tools) has also resulted in significant natural regeneration. Foxes and rabbits have been targeted with the help of the City. In 2011, our group gave a total of 790 volunteer hours and 346 contractor hours of on-ground work at Sorrento.

Friends of North Ocean Reef – Iluka Foreshore

Dr Marjorie Apthorpe is the coordinator of the Friends of North Ocean Reef – Iluka Foreshore. The project area is mainly limestone with Cottesloe vegetation complex, a small area of Quindalup dunes, with some Spearwood soil and banksia woodland. A total of 129 native plant



Mike Norman (left) and volunteers from Synthes at Sorrento Beach. Photo – Mike Norman

species have been recorded in this biodiverse area. Swan Alcoa Landcare Program, *Caring for our Country* and ongoing Coastwest funding have assisted with the extensive on-ground effort. In 2010–11, a large effort was put into hand-weeding cape tulip occupying half the reserve. A previous trial by the City using herbicides was unsuccessful. Grant money pays for a bush regeneration contractor to carry out most of the cape tulip hand-weeding. In 2011, 285 volunteer hours and 668 contractor hours of on-ground work were performed over 1.2 km of Bush Forever site number 325 at Iluka.

Mullaloo Beach Community Group

Marie Macdonald and Sharon McArthur coordinate the revegetation projects carried out by Mullaloo Beach Community Group. We value the ongoing support for our projects by the traditional owners through the South West Aboriginal Land and Sea Council. We also appreciate advice and on-ground assistance from JCCCF committee, the Mullaloo Sea Cubs and Scouts and from the City. We value all volunteers and new volunteers are always welcome. The project areas now extend approximately 1.6 km north from the Mullaloo Surf Club. Successive grants from Coastwest have allowed an extensive program of revegetation and erosion control activities in this section of Bush Forever site number 325. Activities have included planting (10 different locations – 1,700 seedlings in 2011), weeding (volunteer and contractor), fencing, sand-trapping, brushing, rabbit extermination and rubbish removal.



Friends of North Ocean Reef – Iluka Foreshore planted this site in 2005, on the edge of the popular beach at Iluka. Photo – Marjorie Apthorpe

Public entry into the highly mobile dunes has created significant management issues. In 2011 a total of 448 volunteer hours and 295 contractor hours of on-ground work was carried out at Mullaloo. In 2012 we have four projects, two are funded by Coastwest, one by NRM and a Mobile Muster Grant.

The three Friends Groups also work with the Friends of Marmion Marine Park to annually collect and analyse marine debris. These results are reported to the Tangaroa Blue Ocean Care Society to help reduce marine debris in Australia and internationally.

In 2007 JCCCF won a State Landcare award (in the Coastcare category) and Mike Norman won an Outstanding Coastal Leadership Award in the WA Coastal Awards for Excellence. See www.joondalupcoastcare.com for more information.

Resources

New publications

The biology and conservation of Australasian bats (2011) Law B, Eby P, Lunney D, Lumsden L (Eds). Royal Zoological Society of New South Wales. RRP \$75. This book of papers is from a forum held in April 2007 at the Australian Museum. The papers by various authors are divided into four sections; Perspectives on bats in Australia; Biology; Methods and Conservation; and Management.

Bats: from evolution to conservation (2011) Altringham JD. Oxford University Press. RRP \$95. This updated edition covers the key aspects of bat biology, including evolution, flight, echolocation, hibernation, reproduction, feeding and roosting ecology, social behaviour, migration, population and community ecology, biogeography, and conservation.

Australian Bats (2009) Churchill, S. Allen and Unwin. RRP \$45. Revised edition includes a photograph, distribution map, identification key and substantial rewrites of description, biological information and echolocation calls for all 75 Australian bat species.



Bats: a wild Australia guide (2009) Hall L. Steve Parish Publishing. RRP \$15. This guide features information on habitats, breeding, predators and threats, the benefits from bats and bat conservation, as well as information about caring for bats.

Website watch

Vegetation Statistics Statewide provides information on the pre-European and current extent of the ecological communities of WA within the DEC-managed estate and reports on the status of the CAR reserve system for WA. Visit www2.landgate.wa.gov.au/web/guest/downloader.

State of the Environment 2011 includes graded 'report-card' style assessments of environment condition and trends, pressures and management effectiveness. Visit www.environment.gov.au/soe/.

The WA Naturalists' Club has refreshed their website. Visit www.wanaturalists.org.au/.

Centre of Excellence for Climate Change, Woodland and Forest Health Research Bulletins are available for download on the website under the resources tab. Visit www.foresthealth.com.au/html/resources.php.

Science Network Western Australia connects you to news, events and information from all corners of the WA science community. Visit www.sciencewa.net.au/.

eGuide to Australian Birds Morcombe M. RRP \$32. For Apple iPhone, Android smartphones, iPad and iPod Touch. Australia's first fully interactive electronic bird guide includes 3,000 illustrations, several thousand bird calls and maps. Search by geographic location and by distinguishing features. Visit www.michaelmorcombe.com.au/.

Australian Government natural resource management (NRM) website has been launched to provide easy access to grant information and work achieved through *Caring for our Country*. Visit www.nrm.gov.au.

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