

BUSH HERITAGE NEWS

Summer 2013 · www.bushheritage.org.au

In this issue

- 3 Rock-wallabies unveiled on Yourka
 - 4 Around your reserves
 - 6 Falling for the Fitz-Stirling
 - 8 From the CEO
-



Charting the change

Cockatiels bathing at a waterhole on Charles Darwin Reserve, WA. Photograph by Dale Fuller

Your Charles Darwin Reserve in Western Australia is situated at the junction of two major bioregions, in a landscape of extraordinary biodiversity. Its location makes it ideal for a long-term study into how climate change is impacting native plants and animals.

As the morning sun sheds its first light across a subtle landscape of undulating sandplains, dense mulga scrub and shimmering salt lakes, Bush Heritage staff and volunteers are already up and on the go on your Charles Darwin Reserve.

At dawn, each of the strategically placed pitfall traps needs to be checked, and the overnight catch recorded and released as quickly as possible.

In a landscape with three times the biodiversity of Australia's tropical rainforests, the animals found in the traps are many and varied, ranging from spiders, to centipedes, small mammals like dunnarts, geckos and even the occasional brown snake.

Within one of Australia's only two internationally recognised biodiversity hotspots, Charles Darwin Reserve provides essential habitat and vital insights into the conservation of thousands of plant and animal species.

It's also ideally located for gathering information about the long-term effects of climate change in such a biodiverse area.

Under current climate models, the region where the reserve is located is predicted to become rapidly hotter (particularly its summer minimum temperatures) and drier – with an increasing proportion of its rainfall occurring in the summer months.

“It's at these sort of contact points where you're going to first see the changing ecology of plants and animals due to the effects of climate change.”

Dr Nic Dunlop, Project Leader,
Climate Change Observatory Project,
Charles Darwin Reserve



BUSH HERITAGE
AUSTRALIA

Our heart & soul

Right: Sunset over Charles Darwin Reserve.
 Photograph by Jiri Lochman/Lochman Transparencies
 Below: White-striped freetail bat on Charles Darwin Reserve.
 Photograph by Kurt and Andrea Tschimer



The Climate Change Observatory Project, based on the reserve, will provide essential monitoring of a range of climate change-sensitive plants and animals over a 30-year period. This information will be shared with scientists, parks and other conservation organisations across Australia, so they can adapt their future management techniques.

A climate change ‘tension zone’

Dr Nic Dunlop is with the Conservation Council of Western Australia – the peak body in the state for conservation groups. As well as running the organisation’s Citizen Science Program, which gives volunteers the chance to get involved with scientific research and monitoring, Nic has been Project Leader on the Climate Change Observatory Project since its launch in 2008.

He says that the location of Charles Darwin Reserve in a climate change ‘tension zone’ provides a unique opportunity to gain valuable long-term data.

“Charles Darwin Reserve and the adjoining land that’s also managed for conservation provide a very large continuous block of native vegetation – around 300,000 hectares – bounding a region of mid-west Western Australia that’s largely cleared.”

Charles Darwin Reserve also straddles the meeting point of two bioregions, with the semi-arid Avon Wheatbelt bioregion to the south-west and the arid Yalgoo bioregion to the north.

“So you have a junction between these two distinct bioregions,” says Nic. “It’s at these sort of contact points where you’re going to first see the changing ecology of plants and animals due to the effects of climate change.

“The unfragmented nature of the landscape means that we can observe animals on the move and in fact entire communities in a state of flux. Some species at the edge of their distribution will probably disappear (and probably already have) and others will be added from the adjoining bioregion.”

Retreating species

The project team has chosen 10 key ecological indicators to monitor the impacts of climate change over three decades. Continuous climate data is also being collected from a purpose-built meteorological station located on the reserve.

“We’re looking at a range of plants and animals, including bats, ants and dunnarts. Bats are important indicators of climate change because unlike other small vertebrates they can fly, which means they can redistribute relatively easily. But they’re also extremely sensitive to changes in temperature and humidity.”

In fact, the data collected on bats over the last five or six years is so far providing the most conclusive evidence of the effect that climate change is having on some animals. Studies have shown that the southern forest bat has retreated south towards wetter areas, and is being replaced by two arid zone species from the north, the inland forest bat and Finlayson’s cave bat.

A wealth of knowledge

In its first five years, the project has published two scientific papers and is, according to Nic, starting to turn up some real surprises.

“We’re seeing some animals completely disappear from the landscape during droughts and then reappear in the few years when we’ve had average rainfall.

“For instance, we didn’t see the Gilbert’s dunnart for the first four years, but as soon as we had some decent rain it became the dominant dunnart species.”

So the big question is, where are these climate-sensitive animals retreating to when conditions are too hot and dry? “From a long-term conservation point of view, this is vitally important because these are the places that so many of the most vulnerable animal species are going to become increasingly dependent on,” says Nic.

With 25 years still to run on the Climate Change Observatory Project, Bush Heritage is committed to supporting this important research work – not just for the benefits it will bring to the protection of your reserves, but also for the contribution it will make to the preservation of our nation’s biodiversity.

Help support a decade of achievement on Charles Darwin Reserve

In the 10 years that Bush Heritage has owned and managed Charles Darwin Reserve, it has kept revealing new and exciting species, including 21 that are entirely new to science. To protect this natural treasure trove, we need your support with ongoing management work like feral animal control, scientific monitoring and fire management. Please help us reach our target of \$325,000 by donating now at: www.bushheritage.org.au/donate



Left: Mareeba rock-wallaby.
Photograph by Wayne Lawler/Ecopix

Below: Photograph captured by remote monitoring camera at Yourka Reserve.



Rock-wallabies unveiled on Yourka

Bush Heritage Director of Science, Jim Radford, shares his excitement over confirmation of the long-suspected presence on Yourka Reserve of the elusive rock-wallaby.

“You little beauty!” and a muted fist-pump greeted the first image of a rock-wallaby that flashed across fauna consultant Terry Reis’ computer screen. Terry had just downloaded the images from the six cameras he had set up five days earlier on Tiger Mountain, near the southern boundary of Yourka Reserve.

This was, at last, irrefutable evidence of rock-wallabies on Yourka, confirming once and for all they are present on the reserve – and re-affirming that fleeting glimpses during initial property assessments were indeed rock-wallabies.

We had seen rock-wallaby scats when installing and collecting the cameras so we were confident of ‘capturing’ one on camera. But until that first almost other-worldly image appeared on the screen, nothing was taken for granted.

After all, this was the culmination of a week’s worth of scrambling and climbing amongst the rocky outcrops, creeklines and rugged hilltops of Yourka looking for suitable rock-wallaby habitat.

Terry, Murray Haseler (Bush Heritage Ecologist), Paul Hales (Reserve Manager) and I had searched all the suitable terrain on Yourka, looking for scats and signs of occupation.

Cameras were then deployed at three locations. To date, two of those – Tiger Mountain and ‘The Falls’ – have captured rock-wallabies on camera. Given that these areas are around six kilometres apart, we can now confidently say that rock-wallabies are present at two sites on Yourka.

While DNA analysis of hair samples is needed to absolutely determine which species of rock-wallaby is present, the most likely, based on known species distributions and distinguishing features discernible from the photos, is the Mareeba rock-wallaby *Petrogale mareeba*. This is great news for Bush Heritage supporters as the Mareeba rock-wallaby is Near Threatened under the Queensland Nature Conservation Act, and has found safe refuge on Yourka Reserve.

The Tiger Mountain group appears secure as only extreme fire events could threaten them. The group at The Falls is surrounded by lantana that could pose a potential threat during a large bushfire. To improve their long-term security, thinning of the lantana and other fire management work is scheduled for later in the season.

Our next steps are to determine the size of the rock-wallaby groups and the level of interaction between them. But, after six years, the primary aim of confirming their presence on Yourka Reserve has been achieved!

For more information about Yourka Reserve, see www.bushheritage.org.au/yourka

“Until that first almost other-worldly image appeared on the screen, nothing was taken for granted.”

Dr Jim Radford, Bush Heritage
Director of Science

The vital role you play in protecting biodiversity

Purchased in 2007 through the generosity of Bush Heritage supporters like you, Yourka Reserve in Far North Queensland is a conservation stronghold for 39 regional ecosystems – some of which are not protected anywhere else.

Nestled up against Queensland’s Wet Tropics World Heritage area, its rich animal life includes the nationally vulnerable masked owl (northern) and a suite of mammals including gliders, possums, bettongs and bandicoots.

The confirmation of the presence of the elusive rock-wallaby on the reserve only underlines the importance of the role played by you and other Bush Heritage supporters in protecting the region’s biodiversity. Thank you!

Around your reserves in 90 days

Your support makes a difference in so many ways. We take a look at what's been happening at your reserves around Australia – all made possible thanks to you.

10 years at Charles Darwin Reserve on video

As part of our 10th anniversary celebrations, Bush Heritage and the Perenjori Shire welcomed an enthusiastic crowd to our Charles Darwin Reserve Open Day and Blues for the Bush Concert on 5 October. Apart from a range of inspiring presentations on everything from land management to rural community, face-painting for the kids and slow food demonstrations, one of the most popular activities was our reserve bus tours. Each trip gave us a chance to give our many visitors an insight into the important conservation work that you've helped make possible in the last decade. As the sun went down, around 700 people settled in with rugs and refreshments for our Blues for the Bush concert. As someone said, "A night of live music under the stars – it doesn't get any more Australian than this."

All the fun has been captured in a short video, which you can view on the Bush Heritage website at: www.bushheritage.org.au/charles-darwin-open-day



Photograph by Jane Kennedy – Cinaport Productions



All systems go on Monjebup North

Thank you to all our supporters who generously contributed to our Spring appeal to help re-vegetate two significant sections of previously cleared land on our Scottsdale and Monjebup North Reserves. Bush Heritage Ecologist, Angela Sanders, has recently returned from baseline monitoring of plants, birds and animals on the newly re-vegetated area of Monjebup North Reserve – and the news is all good. She reports that there has been good germination across the 110 hectares re-vegetated in 2012, and that plants in the newest restoration area of 140 hectares (made possible by funding from our Spring appeal) are beginning to show through. As we extend our total Monjebup North restoration area, we are adding new monitoring sites that will enable us to observe which native animals are moving into the area, and when. In time, we hope that this restored area will support new populations of numerous animal species, including the honey possum and tammar wallaby.

Photograph by Jiri Lochman/Lochman Transparencies



- Capital city ●
- Bush Heritage reserve ●
- Bush Heritage reserve actively engaged with traditional owners ●
- Bush Heritage partnership



The elusive Lumholtz spotted

While driving through the Cameron Creek section of Yourka Reserve, Reserve Managers Paul and Leanne Hales couldn't believe their eyes. There, in front of them in the middle of the road, was a juvenile Lumholtz tree-kangaroo, which is listed as rare under Queensland's Nature Conservation Act. It clambered up a nearby tree where it sat for a while before dropping to the ground again and bounding off. This is the first sighting of this elusive species on Yourka Reserve, and right on the edge of its known distribution. Says Leanne, "I posted the sighting on the Tree-Kangaroo and Mammal Group's website and it caused real excitement because of its location in a much drier area than normal. This means we now have seven types of macropods resident on Yourka." The next step will be to determine if this youngster is part of a tree-kangaroo population now inhabiting the reserve. Sightings of new species like this on Yourka are only possible because of your ongoing support.



Photograph by Leanne Hales

Candid camera

Local volunteers have been helping to monitor fox numbers on your Scottsdale Reserve. But sometimes what you find is not quite what you are expecting. The carcass of a feral pig was recently left part-buried in front of a remote sensor camera with the intention of counting how many foxes appeared for a feed. Over about 10 days the camera captured hundreds of images, not of foxes, but of five wedge-tailed eagles feeding on the carcass. While one fox did attempt to get in on the action, the images show he was 'seen off' by the eagles. Peter Saunders, Bush Heritage's Healthy Landscapes Manager for South East NSW, says the result is doubly great because the meal went to the local 'wedgies', and only one fox was spotted during the monitoring.

Photographs captured by remote monitoring camera at Scottsdale Reserve.





Falling for the Fitz-Stirling

As a major partner in the Gondwana Link project, which aims to restore and reconnect landscape in south-west Western Australia, Bush Heritage is strengthening its conservation efforts by joining forces with like-minded neighbours.

It's a long way from the craggy, towering volcanic peaks of Queensland's Glass House Mountains to the sandplains and rocky outcrops of the Fitz-Stirling region of south-west Western Australia.

But for former custard apple farmers, Bill and Jane Thompson, the move made perfect sense. After their Queensland farm was compulsorily acquired for railway infrastructure, the couple who are keen amateur botanists and regular visitors to south-west Western Australia, decided that the Fitz-Stirling region was where they wanted to re-settle.

The Thompsons had been astounded by the region's biodiversity and deeply impressed by the sheer ambition of the Gondwana Link project. "We wanted to use our remaining 10 or 15 years of energy to do something to help the environment," says Jane. "We admired the ambitious vision of Gondwana, and the positive, passionate folk that we met, helped to clarify what we wanted next from our lives."

New neighbours

After seeking guidance from Gondwana Link the couple bought Yarroweyah Falls, a botanically-rich 1,500 hectare property. With Bush Heritage's Monjebup Reserve adjoining to the south, and linking through to Bush Heritage's Monjebup North Reserve, the three properties combined form a U-shaped area of 3,000 hectares of continuous native habitat.

The Thompsons' purchase is extremely significant because it complements and extends Bush Heritage's own substantial contribution to the Gondwana Link restoration project in this area.

Since buying Yarroweyah Falls in 2012, the Thompsons have restored 100 hectares of cleared land, which started with hand-collecting the seeds of more than 200 local native plant species based on advice from Bush Heritage.

"Having Bill and Jane as our neighbours – and the partnership that we're building – is just so important from a landscape management perspective," says Simon Smale, Bush Heritage's Gondwana Link Landscape Manager. "In this region, even small remnants of bush – as little as hundreds or even tens of hectares – can contain extraordinary biodiversity.

The 730 hectares of native bush on Bill and Jane's property is a continuum of the landscape on our Monjebup Reserve. So being able to manage and protect it as one is just incredibly significant."

Hidden secrets in a rugged landscape

In September, Bush Heritage led the first-ever botanical survey on a remote section of the Thompson's property where the boundary between Yarroweyah Falls and Monjebup Reserve merges.

With no vehicle access whatsoever, this is an extremely rugged landscape, characterised by granite outcrops, creek-dissected valleys and shallow soils.

Joining the survey team was consultant botanist, Libby Sandiford, who has been described as a "walking encyclopedia of plants". Libby chose survey areas where she believed they had the best chance of finding a wide range of plants including threatened species, species at the edge of their known range or even completely new species.

Over 400 samples were collected, including those of several unknown species, much to the delight of Bill and Jane. The fact that they were unrecognisable to expert Libby is a good indicator that they are either new species to science or certainly very unusual.

Bird notes were also collected each day. Amongst the 60 sightings of different species were the western whiplbird and vulnerable malleefowl.

The full survey report will be finalised around year-end and we look forward to sharing the most exciting findings with you.



“It’s really quite amazing what Bill and Jane’s arrival and our partnership with them has done,” says Simon Smale. “Every time we go out there now with visitors we always drop in on them for a cup of tea. They have become like a new hub of the Fitz-Stirling.”

“In this region, even small remnants of bush – as little as hundreds or even tens of hectares – can contain extraordinary biodiversity.”

Simon Smale, Gondwana Link Landscape Manager

Top left (opposite page): Bright bursts of lichen help bring the landscape alive with colour. Photograph by Simon Smale

Top centre (opposite page): The vulnerable malleefowl is an important species being protected in this region. Photograph by Jiri Lochman/Lochman Transparencies

Above: After a winter of good rains, water is flowing. Photograph by Simon Smale



You can help benefit the red-browed finch when you buy a WILDgift card. Photograph by Rob Drummond

Place your order by mid-December to receive printed cards in time for Christmas!

Give a gift that gives back to the bush

Now is the perfect time to order a gift that protects Australia’s land, water and wildlife.

When you buy a Bush Heritage WILDgift, you make a real difference to conservation in Australia. Each gift represents an important area of our work protecting Australia’s animals, plants and habitats all across the country.

For each gift purchased, you’ll receive a beautiful gift card which you can send on to your friend or loved one, letting them know about the conservation successes made possible by your wonderful gift.

Visit www.wildgifts.org.au today to view the full range of WILDgifts. Both e-card and printed cards are available, and all gifts are tax-deductible.

Thank you

Bush Heritage thanks the many supporters that have donated in honour of friends or family members. A small selection of recent donations is below.

In memoriam

Mrs Shirley Pryor donated in memory of her grandson, Noah Domen Skaberne-Pryor. Ms Wendy Branagan donated in memory of Gwen Fitzgerald. Mrs Patricia Plumbley donated in memory of her parents, Eileen and George Bilbie. Mrs Ursula Dennis donated in memory of her husband, Stan Dennis.

In celebration

John Bennett and Ruth Johnston donated to Bush Heritage in celebration of the wedding of their niece Ella to new husband Ben. Mrs Janet Mayer celebrated the birth of Emily Egger with a donation. Dr Roslyn Brooks chose to donate to celebrate the birth of Peggy Leah Mason and her mother Lee Brooks’ birthday. Sue Reeve donated in celebration of her sister Marion Darvenzia’s birthday. Jolene Owen celebrated the birthday of her father Robert Owen with a donation. Marelle Aumend donated to celebrate the birthday of Hannah Aumend.

Bequests

The Estate of Joan M Hastwell, The Estate of Barbara Helen Thompson and The Estate of James Edward Alexander Bond.

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FROM THE CEO

In October, the Top 50 Philanthropic Gifts of All Time were announced in Melbourne.

I am honoured and extremely proud that Bush Heritage was the recipient of not one but two of the extraordinary gifts recognised in this prestigious list.

The first was the purchase in 1991 of 275 hectares of magnificent forest in Tasmania by Dr Bob Brown. Bob used his Goldman Environmental Prize of \$49,000 as a deposit to buy the land and save it from logging. From this single act of generosity, Bush Heritage Australia was born.

The second gift involved Bush Heritage's participation in The David Thomas Challenge. In 2007, David and Barbara Thomas made a \$10 million commitment to six not-for-profit organisations, including Bush Heritage, aimed at encouraging new and increased levels of philanthropic support for conservation projects through matching gifts. Your generous donations along with the matching gifts helped to ultimately raise a total of \$9.8 million for Bush Heritage.

The Top 50 Philanthropic Gifts of All Time were then opened for public voting to create the Top 10 People's Choice Awards.

I am personally delighted that Bob Brown's gift, which launched Bush Heritage, was among those chosen to be honoured by the people of Australia.

In recent months, we've had cause for double celebration on Yourka Reserve in far-north Queensland with confirmed sightings of both the rock-wallaby and Lumholtz tree-kangaroo. Yourka still has many secrets to reveal and is proving itself to be a real stronghold for rare and threatened animal species.

And in October, Bush Heritage celebrated a decade of ownership of Charles Darwin Reserve with an inspiring open day and evening blues concert, which I was privileged to attend.

The Open Day's nature-based reserve tours were popular right from first thing in the morning, and the sustainability talks by prominent academics and rural leaders were also very well-attended. There was much discussion about issues like conservation and production, animal ethics and climate change.

The formal sessions attracted around 200 people and included a Welcome to Country by Ashley Bell of the Badimia people, followed by an address by local Shire President, Chris King.



Gerard O'Neill at Charles Darwin Reserve. Photograph by Jane Kennedy - Cinaport Productions

The evening concert saw 500 more people arrive to enjoy a night of blues music under the stars.

Bush Heritage staff and volunteers were on the go all day, and were up early again the next morning to 'bump out' and get on with their normal duties. A huge thank you to them, our sponsors and our many volunteers, as well as all who attended this magical day.

Gerard O'Neill, CEO



Bush Heritage is a not-for-profit organisation, funded entirely by donations from generous supporters like you.

Yes, I'll help you continue to carry out vital management tasks on Charles Darwin Reserve!

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You can also donate online at www.bushheritage.org.au/donate

We sometimes work closely with other like-minded organisations. Occasionally we may allow these organisations to send you information that we believe may be of interest to you. These organisations usually allow us to do the same, which helps us reach more people with vital information. If you would prefer not to receive such mailings, please tick this box.

