



Autumn 2009

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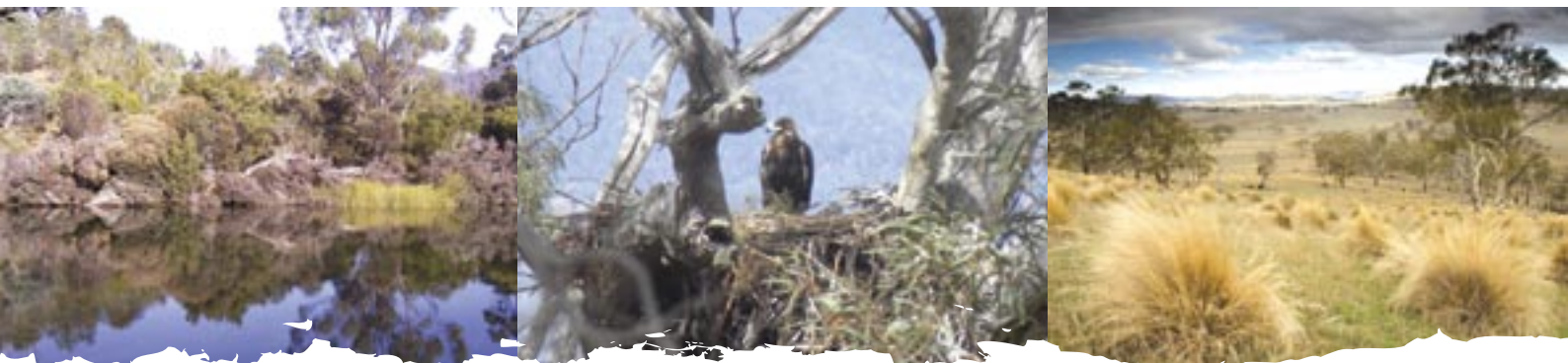
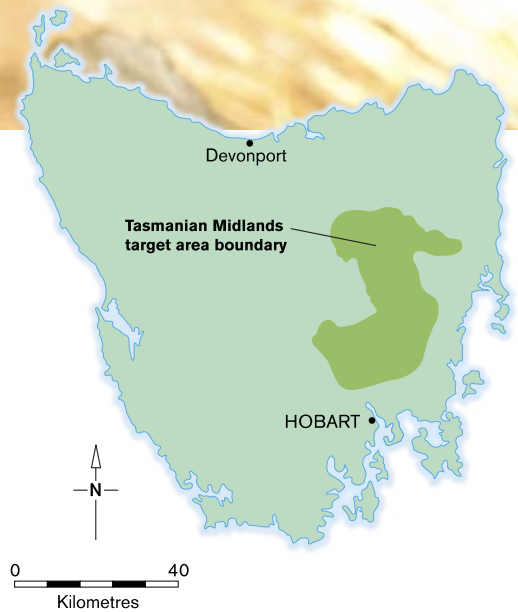
Protecting Tasmania's biodiversity hotspot

The Tasmanian Land Conservancy's CEO **Nathan Males** and Bush Heritage ecologist **Dr Matt Appleby** give us the lowdown on an exciting new conservation initiative.

Drought-affected landscapes, dust storms and plans for extensive irrigation schemes ... It all sounds like a description of the Murray–Darling basin but, surprisingly, this is the current situation in Tasmania's Midlands.

Whether it is climate change at work or just a blip in the weather patterns, drought is not the only issue. Land managers in the region are also concerned about the long-term viability of farming systems, their impact on the environment and the potential social and cultural effects on their rural communities.

A proposal for a significant increase in the area under irrigation in the Midlands may provide new agricultural



Clockwise from top: Everybody's favourite, the Tasmanian devil (*Sarcophilus harrisii*). PHOTO: MATT NEWTON. The Tasmanian Midlands is one of Bush Heritage's five priority regions. Grassy white gum woodlands and silver tussock grass. PHOTO: MATT NEWTON. Wedge-tailed eagle. PHOTO: LEIGH WALTERS. Lowland River. PHOTO: DANIEL SPROD.

‘Since I started farming more than 30 years ago I have had a growing awareness that biodiversity conservation and the broader benefits of maintaining natural ecosystems – provision of clean water, carbon sinks, plant pollination, natural pest control, healthy soils, nutrient recycling, etc. – should be an integral part of the farming enterprise and balance sheet. This new partnership recognises this reality and I look forward to being part of making it happen.’

– Andrew Cameron, farmer and partnership coordinator



opportunities, but is potentially a new threat to the area's grassy ecosystems. The underlying message is clear: urgent action is needed if we are to keep the unique wildlife of this region.

The landscape between Tasmania's Great Western Tiers and the east coast ranges represents one of Australia's handful of national biodiversity hotspots – the grassy lowland plains of the Tasmanian Midlands. The region was defined as a hotspot due to the large number of species that are endemic (unique) to the area, and because it is a refuge for a number of marsupials that are endangered on the mainland, such as the spotted-tailed quoll (*Dasyurus maculatus*) and the eastern barred

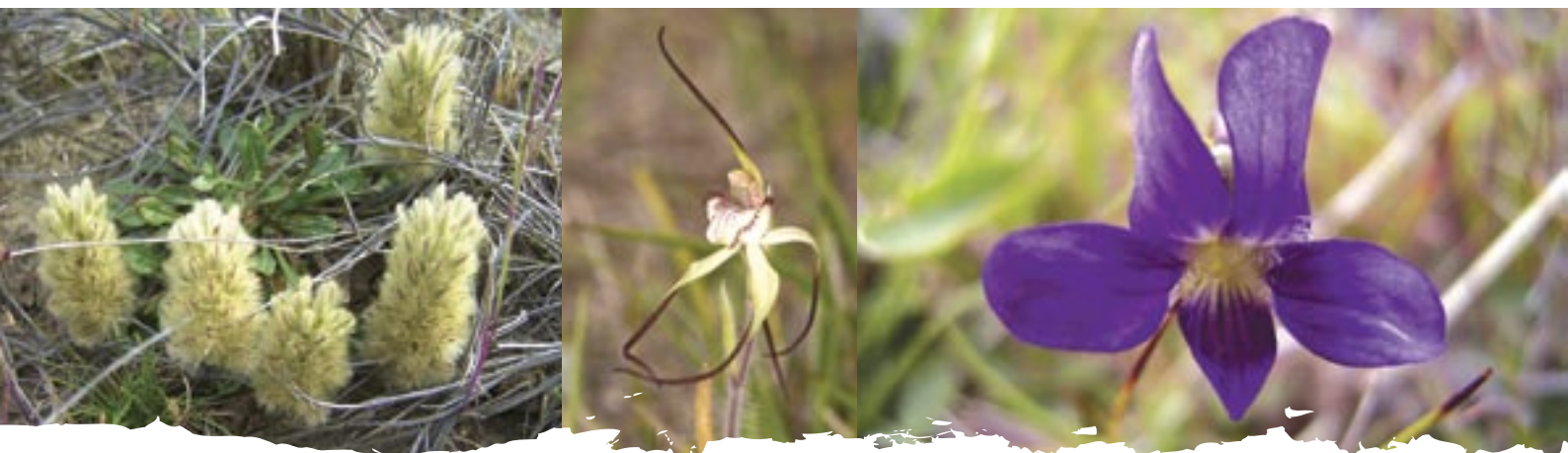
bandicoot (*Perameles gunnii*). There is also significant pressure on these natural inhabitants from a range of land uses that have altered habitat over the years.

Critically, less than four per cent of the Midlands region is protected in secure reserves, making the region a priority for conservation. Because 98 per cent of the land is privately owned – frequently by families who've been in the area for generations – working with landowners is the only way to achieve effective conservation in the Midlands.

Recognising this, Bush Heritage, the Tasmanian Land Conservancy and Tasmania's Department of Primary Industries and Water have formed a partnership to provide new opportunities

for landowners in the Midlands who are interested in making their conservation efforts generate income. The partnership will explore new and existing models of conservation management on private lands, with a particular emphasis on multi-generational time-scales.

The partner organisations are already working with a number of landowners who share common conservation goals. For landowners, any conservation initiative must also take into account the social and economic impacts on their farms and on the broader Midlands community. A key message from landowners is that conservation agreements and support



Clockwise from top: Middle Park woodlands. Showy violet (*Viola betonicifolia*). PHOTOS: MATT APPLEBY Blacktip spider-orchid (*Caladenia anthracina*). PHOTO: MALCOLM WELLS Pussytails (*Ptilotus spathulatus*). PHOTO: MATT APPLEBY.

for conservation action on other lands need to be ongoing and keep pace with the costs of management.

The partnership received initial financial support from The Myer Foundation and the Australian government's National Reserve System Program to develop a conservation action plan (CAP) and a business plan addressing the long-term implementation of the project.

The completed CAP and business plan explore new and existing models for protecting conservation values and provide funders and supporters with costings and likely outcomes. It proposes a two-pronged approach, encompassing both the acquisition of land and drawing up of conservation covenants with current landowners, and the establishment of a long-term fund to pay for conservation actions by partner landowners.

The project's commitment to both social and ecological sustainability has led The Sidney Myer Fund to recently commit \$2 million additional support to the project. This seed funding will be used to begin work on both arms of the project – initial acquisitions and set-up costs for landowner partnerships, and to set up a seed fund that will provide support for conservation down the generations.

While considerable further support will be required to establish the project, this generous initial funding has recognised the significance of Tasmania's Midlands. The foundations are in place and the process of seeking funding, building new partnerships and strengthening existing reserves is about to begin.

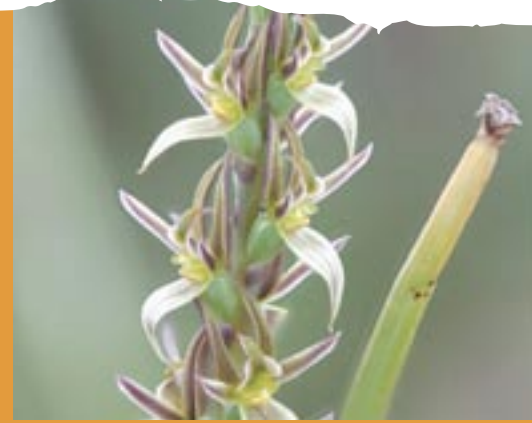


Orchids in the Midlands

Ecologists use a number of different techniques to gauge the health of ecosystems. The presence of particular species is recognised as a critical indicator of a functioning ecosystem.

In the Tasmanian Midlands, orchids are often a useful indicator. Native pastures that have been disturbed in the past by ploughing and fertilisers will usually have few orchids other than the common onion orchid (*Microtis* sp.). These disturbances harm the delicate symbiosis between mycorrhizal fungi and the roots of the orchids, affecting their ability to absorb nutrients from the soil.

Today there are six species of orchid endemic to the Midlands that are either endangered or critically endangered.



Native grasslands and grassy woodlands are ecosystems of the highest priority for the Midlands project, and the least disturbed patches provide habitat for most of these orchids.

Most, such as the pungent leek orchid (*Prasophyllum olidum*) and the Midlands greenhood (*Pterostylis commutata*), are found only in a handful of sites.

Midlands ecology

Many visitors to Tasmania are surprised when they see the dry Midlands landscape. In fact the lowland grasslands receive around 450 mm of rainfall a year, comparable to famously dry parts of inland Victoria and New South Wales such as Bendigo and Dubbo. The surrounding ranges soak up most of the rain, leaving the Midlands in a rain shadow. The lowland landscape formed along a geological fault, which filled with water to form a shallow lake that over thousands of years silted up to become an alluvial plain. Dotted along the fault were a chain of volcanoes that helped to create the fertile basalt soils that also occur on the valley floor.

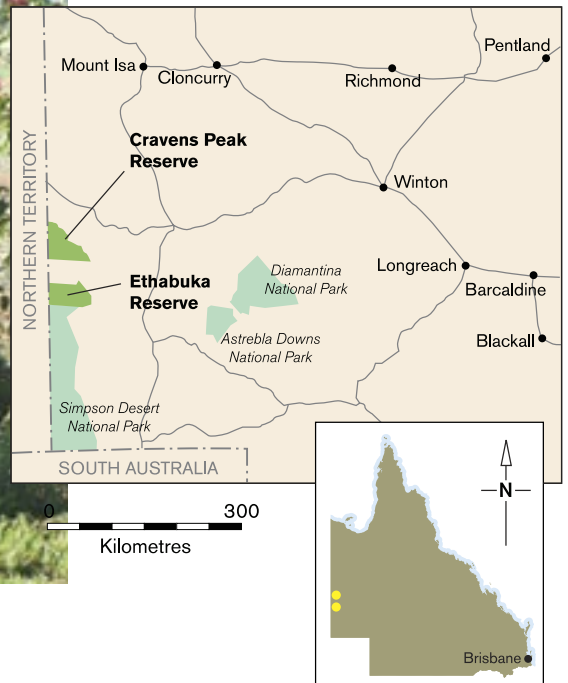
Far from being a drawback, the combination of fertile soils and low rainfall provides perfect conditions for grassy ecosystems to thrive.

The mosaic of grassy ecosystems, dry woodlands and forests provides a complex pattern of habitats that are ideal for wildlife, such as the endangered Tasmanian devil (*Sarcophilus harrisii*). The grasslands and ephemeral wetlands are particularly important as they form the stronghold



for a range of threatened and endemic species: the pungent leek-orchid (*Prasophyllum olidum*), grasslands paper daisy (*Leucochrysum albicans*) and Midlands buttercup (*Ranunculus prasinus*) to name a few. The surrounding woodlands and forests are also home to the Tasmanian bettong (*Bettongia gaimadi*), a species now extinct on mainland Australia.

Clockwise from top: Golfers leek-orchid (*Prasophyllum incorrectum*). Rocky knoll overlooking a valley on Beaufront. Grassland paperdaisy (*Leucochrysum albicans*). Kangaroo grass (*Themeda triandra*) grasslands on Wanstead. PHOTOS: MATT APPELBY.



A day on a desert reserve

Nella and Mark Lithgow are reserve managers at Cravens Peak and Ethabuka reserves, two major arid-zone properties bordering the Simpson Desert in Queensland. While they live mostly at Cravens Peak, their work takes them across all 446 300 hectares of both reserves, which are two hours' drive apart. Mark and Nella have been at Cravens Peak since July 2008.

Before joining Bush Heritage, Mark was a viticulturalist, managing large vineyards and the Lithgows' own small vineyard in Victoria's Yarra Valley. He is also a four-wheel drive instructor and worked as a bulldozer operator and summer-season firefighter for Melbourne Water. Meantime, Nella was a high-school teacher, working in various Victorian country schools. As Mark and Nella love the outdoors and travelling through Australia's many remote areas,

working at Cravens Peak was a natural progression for them ... although living in the desert requires fewer jumpers than living in the Yarra Valley hills!

We asked Mark and Nella what a typical day on the reserve held for them.

7.00 Fuel, water, food, GPS, tools, SAT phone, EPIRB, maps, winch, spare tyres, riggers' gloves, hat, sunnies, sense of humour?

Check, check, yep, got it, let's go.

Heading out for a day's work in the desert requires more than a train ticket, newspaper and laptop but, on the plus side, we work on one of the most magnificent landscapes in Australia.

Our travel into work today carries us over spinifex-covered red sand dunes, sprinkled with fauna tracks and occasional wildflowers. The trip out in the morning is always a joy but the trip home can be a challenge as the heat

dries the sand to a soft and powdery texture, reducing traction – if we don't get our speed just right as we head up the dune, then winching the ute off the sand is the only way out.

8.30 We've arrived at today's job site. We're going to be wrestling with a few hundred metres of barbed wire macramé, rearranged by a passing camel or two on the way to scooping reserve greenery. This is known as fence fixing! Next we hammer in steel star pickets which are at frying-pan temperature, and watch them disappear to China in a bottomless pile of red sand.

12.00 The temperature is heading towards 47°C and the bore-water washed shirt starts to feel a bit like tent canvas. After a few hours' hard work, the fence is in good working order and will hold back passing stock. Well, until



Clockwise from top: Mark and Nella Lithgow at Cravens Peak Reserve, Qld. PHOTO: NELLA & MARK LITHGOW. Cravens Peak and Ethabuka reserves are in the Gulf to Lake Eyre region, one of Bush Heritage's five priority regions. Bronze foxtails after rain at Ethabuka Reserve, Qld. Red sand and spinifex *Triodia hummock* grass at Cravens Peak, Qld. PHOTOS: WAYNE LAWLER/ECOPIX



the next camel fancies our bushes rather than the neighbours'.

We head towards the shade of an old gidgee tree for lunch, a rest and a tussle with the flies over our sandwiches.

1.00 On the way back to the homestead, we stop off to check one of the bores and start up the pump. If this isn't done regularly the high level of calcium and salt in the bore water will cause it to seize. Depending on the position and depth of a bore, the water that comes from the Artesian Basin can vary considerably in quality. The starting procedure is best left to the strong and fast – you hand-crank the handle and let it go quickly, otherwise you'll end up spinning around on the end of the handle like a cartoon character! This bore once fed water to cattle, but it is now used for emergency water, herbicide spraying and firefighting in these remote areas.

1.30 As we travel along we pick up bits and pieces left over from the cattle station days such as rusty 44-gallon

drums and masses of plastic poly pipe left over from transferring water from bores to dams and troughs around the property.

3.30 We continue homewards, stopping off to set up the motion-scanning camera at the last remaining functional water trough. The camera provides photographic information on the type and number of feral animals (camels, cattle, cats, horses and foxes) that visit the trough at night. By using the camera, we get a glimpse of their nocturnal routines, which helps us control their access to the reserve. The University of Sydney also uses motion cameras in many locations around Cravens Peak and Ethabuka, recording the visits of both native inhabitants (dunnarts, spinifex hopping mice, mulgaras, dragons, skinks, scorpions, spiders) and animals feral to the desert regions.

4.00 Heading back, we wave to the corellas in the tree. We admire a lone bustard (a very large bird favoured as

bush turkey by the traditional owners and early settlers) standing still in the dry grasses.

The military dragons (small lizards) speed past us on the track as if they want to get to the shower before we do. It's the kind of afternoon when we burn our arms on the windowsill of the car door because we forget the heat. We turn the airconditioning on, which then gives up because it is above 40 degrees. 'Open the window and the flies come in; close the window and you're sweatin' again!'

5.00 Aaaah, home. The welcome sight of the fridge cooling the beer, the 'aircon' to cool your head, the washing machine to wash the sweaty socks and starch your shirts in bore water again ... and the emails to check from Bush Heritage people in Melbourne.

Feel inspired? Visit us online at www.bushheritage.org.au for volunteering opportunities.



Clockwise from top: Billy buttons and heath, Ethabuka Reserve. PHOTO: WAYNE LAWLER. Bush Heritage uses motion scanning cameras at Cravens Peak and Ethabuka reserves to monitor nocturnal movement of animals. A wetland flower, frankenia, after rain at Ethabuka. Flowering longtails (*Ptilotus polystachyus*). PHOTOS: WAYNE LAWLER.



Endangered orchid found at Nardoo Hills

An exciting discovery was recently made at the Nardoo Hills reserves in Victoria.

We have confirmed the occurrence of a very rare orchid – the northern golden moths or *Diuris protena* – at Nardoo Hills. The newly described orchid was listed under the *Flora and Fauna Guarantee Act* in 2007, and is found only in Victoria where it is classified as endangered.

The orchid was first discovered and described in 2006 in the grasslands of Terrick Terrick National Park around 60 kilometres to the north-east of Nardoo Hills. Although a number of populations have been recorded from

grassy remnants in recent years, many populations are very small and vulnerable to a range of threats.

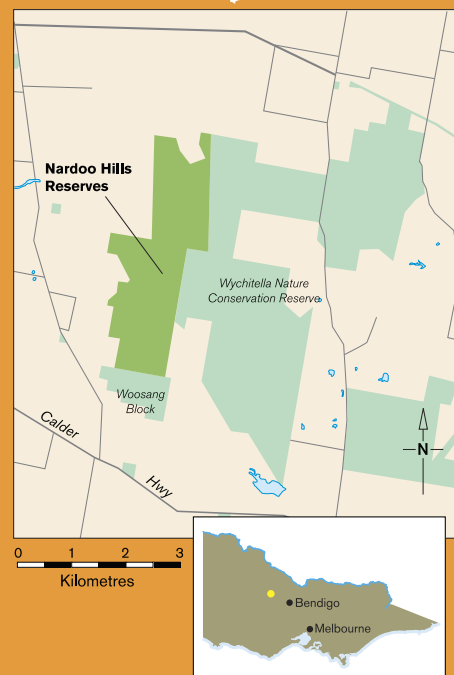
The Nardoo Hills population of over 400 plants is the largest known in Australia, and occurs in species-rich grassy yellow box woodland on the slopes of Mount Kerang.

Bush Heritage's David Baker-Gabb, who manages the Nardoo Hills reserves, first spotted the orchid and alerted Deanna Marshall, Senior Flora Officer with the Department of Sustainability and Environment. They then had to wait for the plant to flower again before it could be collected and formally identified.

'The wait was worth it', says Deanna. 'It's a really significant find because of the population size and because it's on secure land! The discovery is very good news for the orchid's long-term survival.

The presence of the orchid at Nardoo Hills suggests that restoration work at the reserve is really paying off. As Bush Heritage ecologist Paul Foreman says, 'I'm sure all that rabbit and weed control work done by David Baker-Gabb, Jeroen Van Veen and many volunteers has had something to do with it!' Previously, grazing by rabbits and stock would have restricted flowering and therefore threatened the orchid's long-term survival on the property.

Discussions with the Victorian Herbarium indicate that the likely pollinator for the



orchid is a native bee that also pollinates bulbine lilies that are similar in size and colour to the orchid. Bulbine lilies are widespread across the Nardoo Hills, and often co-occur with the northern golden moths orchid.

The Victorian Herbarium is keen to collect seed from the population as a contribution to the Millennium Seed Bank Project. The Royal Botanic Gardens at Kew, UK, is running the project, which aims to conserve 10 per cent of the world's wild plant species by 2010, concentrating on the 'rarest, most threatened and most useful species known to man'.

In memory

Cheryl Turner made a donation in memory of her dear late husband, **John Turner**. We gratefully acknowledge a generous bequest from the estate of **Lindsay Shield Whitham**, one of Bush Heritage's earliest supporters and a passionate lifelong conservationist. **Frank Smith** and **Dathne McPherson** were remembered by Burnett and Elidia Rymer, and Brian Pilmore made a donation in memory of **Rae Jones**.

Chris Kanizaj remembered **Joyce Merle** and **Phillip 'Dick' Rosendahl**, and Julia Gardner donated in memory of **Ken and Gladys Skillman**, formerly

of the UK, who made several visits to Australia and loved the forests and bush. Ron West donated in memory of **Gloria Honor West**, and friends and family of **Simon Nield** donated in his memory.

In celebration

Family and friends of **Susan Robertson**, including John B Reid AO, Jean Hedges, Margaret Ross AM and Dr Ian Ross celebrated her 70th birthday with donations in her honour. Donations were made by the family and friends of **Jennifer Robinson** in celebration of her 40th birthday. **Kathleen and Reg Johnson** made a donation to Bush

Heritage to celebrate their diamond (60th) anniversary, and Jennifer Druce and Joy Lobwein donated in celebration of the christening of **Miriyam Keidge**. **Landscape Photography** raised funds which they donated to Bush Heritage, and many other supporters made donations in lieu of Christmas gifts for friends and families.

If you would like to make a gift to Bush Heritage in memory of a friend or to celebrate a special occasion, visit www.bushheritage.org.au or call 1300 628 873.

The northern golden moths (*Diuris protena*) has been found at Nardoo Hills reserves, Vic. PHOTO: PAUL FOREMAN Nardoo Hills is part of the South-East Grassy Box Woodlands priority region.

On our watch

Bush Heritage's Chief Conservation Officer, **Dr Nicola Markus**, is the author of a new book called *On Our Watch: The race to save Australia's environment*.

We often don't appreciate just how unique Australia's environment is. Most of our plants and animals exist nowhere else – and it is our responsibility to ensure that these species don't go the way of the dodo. More than 100 have become extinct so far.

Just as our environment is unique, so too are the conservation challenges we face. Climate change, land-clearing and large numbers of invasive weeds and feral animals are only some of the factors that are causing large-scale habitat loss and these are exacerbated by land-uses that are not suitable to this ancient continent.

In *On Our Watch*, Nicki provides a revealing snapshot of Australia's current environmental situation – where we are now, how we got there, what is currently being done and which barriers currently

stand in the way of halting the decline of our living environment.

On Our Watch cites scientific evidence that our native species and ecological communities are in a bad way as a direct result of our lifestyles.

'Our ecosystems and species are suffering from the ongoing impacts of urbanisation, poor land-management, loss of habitat, disease, and invasive feral animals and plants. Most of all, they are suffering from people's perception that these are problems for "someone else" to deal with.

I wanted to write a book that clearly showed people how much damage our everyday lives are inflicting on Australia's landscapes and plant and animal species. Up until now, there has been nothing on our bookshelves that has dealt with Australia's environmental situation so specifically, and I felt this needed to be addressed!

On Our Watch provides a blueprint for living a life that can make a difference. All that it takes is a few new habits. How

we shop, what we eat, where we live and how much waste we produce all have direct consequences on the natural environment. Bringing their impacts to the fore, Nicki suggests alternatives that are simple but powerful and reach far beyond our own four walls.



We have two copies of *On Our Watch* to give away. For a chance to win, please email your name, postal address and tell us about a lifestyle

habit you have changed to reduce your impact on the environment.

Special offer: The first two people to sign up to Friends of the Bush online, our regular giving program, quoting 'ON OUR WATCH' will also receive a free copy of the book. Visit www.bushheritage.org.au

From the CEO

I wrote last newsletter of the global financial crisis and its likely effects. Now, several months in, I can report that we are tracking well in the circumstances, but your continued support is critical.

We are a robust organisation, thanks to our supporters and partners, and we are performing very well against our short-term conservation targets for the 2007–2011 period. Our acquisition goal was to secure ten additional reserves totalling 1 million hectares – to date, we have already purchased nine reserves totalling 334 357 hectares.

We have more than exceeded our partnership target – which was to partner with a further ten landowners on their properties totalling at least 750 000 hectares. In fact, we have developed initial partnerships across ten properties totalling 2.5m hectares. This is no small feat and we recognise, in particular, the work of our Indigenous Programs team.

Our BioPrep program, working to identify the most important landscapes

for conservation, is also going well. Two of our priority regions have already been examined, and the remaining priority regions will be analysed over the next twelve months. This will provide us with additional information about the presence of rare or threatened species and the likelihood of future threats, and will aid us in our reserve management planning as well as in our future acquisition and partnership development.

Our work to fund these conservation outcomes, while impacted by the global financial crisis, continues apace and Bush Heritage continues to be increasingly associated with high conservation outcomes. However, we have been affected by the current financial landscape, and we have to restrain our ambitions for growth in the short to medium term. Year to date income to the end of February 08/09 is running at about the same level as for the same period to the end of February 07/08 (for simplicity, large land acquisition funds have been removed from the equation) and we are very grateful for the ongoing support of our donors in these difficult times. Your support has enabled us to hold our teams

together and keep working towards our long-term conservation goals.

We will therefore focus in the short term on those of our 2011 goals against which we have already made significant progress: maintaining our existing reserves and partnerships. Your continued financial support is critical so our conservation activity doesn't slip back. Should you be interested in helping in a more hands-on way, please view our website or register for our volunteer newsletter for information on volunteer opportunities both out on our reserves and in our Conservation Support Centre in Melbourne.

Finally, with Victoria devastated by February's fires and Queensland by prolonged flooding, our thoughts extend to all those who have suffered losses during the extreme conditions Australia has faced over recent months. See www.bushheritage.org.au/about/CEO for more on the recent fires and floods.

Doug Humann

On Our Watch, the new book from Dr Nicola Markus.

