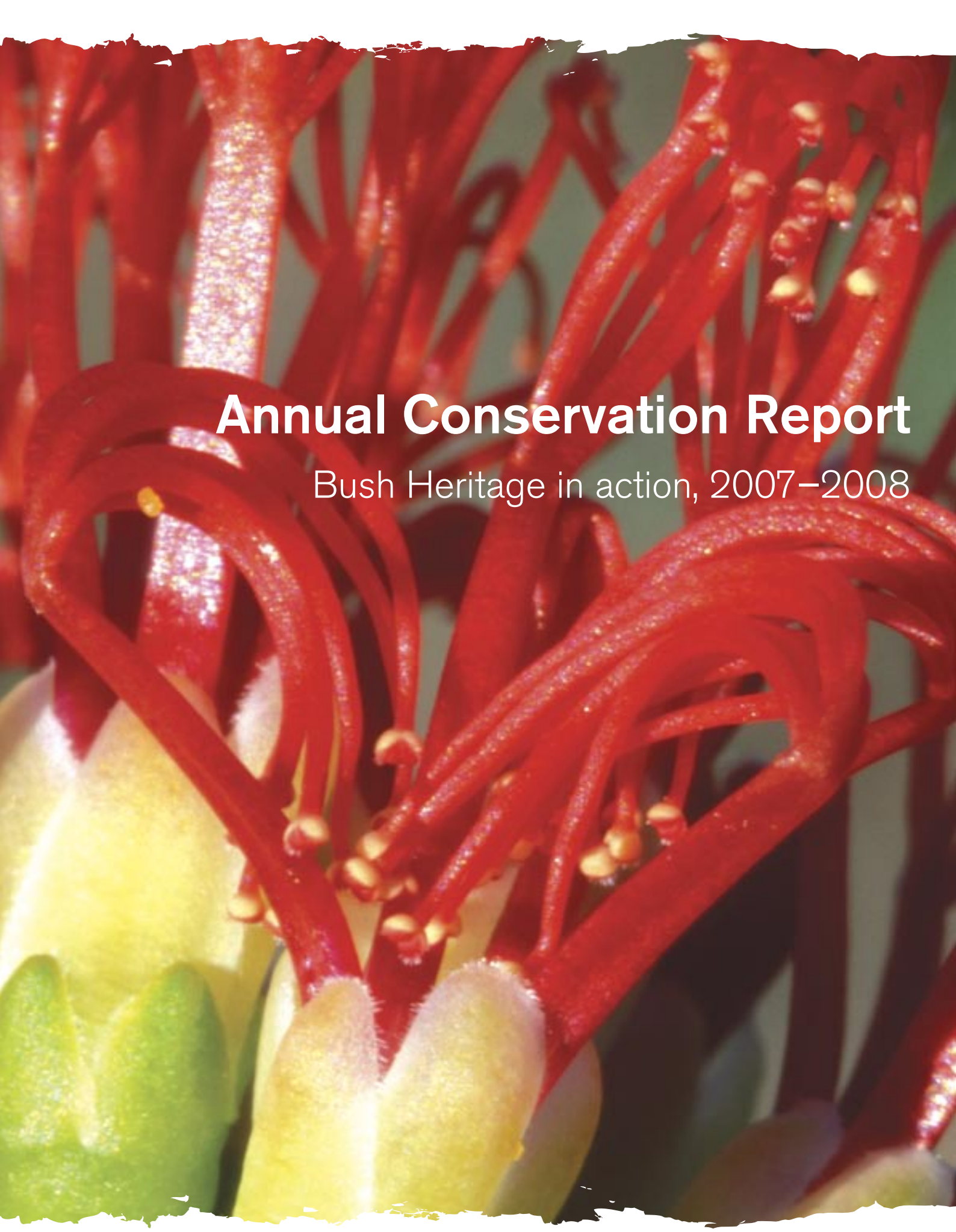

# Annual Conservation Report

## Bush Heritage in action, 2007–2008

BUSH HERITAGE
AUSTRALIA

**Vision for the future** By 2025 Bush Heritage will protect 1 per cent of Australia by conserving more than 7 million hectares of Australia's land and water and the wildlife that inhabits these protected areas. Protecting Australia's biodiversity and restoring the health of the environment are our highest priorities. We also work in partnership with others to rebuild the resilience of whole landscapes, and use best available science to manage the land under our care.

**Our values** Bush Heritage's culture requires a commitment to collaboration and support, and a total commitment to the development of our people. All Bush Heritage people subscribe to our values:

- Conservation goals are paramount.
- We collaborate.
- We are pragmatic, down-to-earth and open.
- We are supportive of others.

 

**Front cover:** Northern bottlebrush (*Beaufortia aestiva*), Eurardy Reserve, WA. PHOTO: MARIE LOCHMAN/LOCHMAN TRANSPARENCIES **Clockwise from far left:** Sunlit leaves of forest red gum beside Sunday Creek, Yourka Reserve, Qld. Mistletoe in black tea-tree in an artesian spring on Edgbaston Reserve, Qld. Galahs drinking at Oonartra Waterhole, Boolcoomatta Reserve, SA. Native bee on daisy (*Senecio cunninghamii*), Boolcoomatta Reserve, SA. PHOTOS: WAYNE LAWLER/ECOPIX

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## Board of Directors

**President: Phillip Toyne** LLB, DipEd – Director, EcoFutures Pty Ltd. Phillip is one of Australia's leading environmentalists. He was the Executive Director of the Australian Conservation Foundation where he helped to establish the National Landcare Program. He was a visiting Fellow at the Australian National University before becoming Deputy Secretary in the Commonwealth Department of Environment. Earlier he worked as a lawyer for Aboriginal groups in central Australia. EcoFutures is a company working on sustainability initiatives with business and governments. Phillip is also a director of ITC Limited, the National Business Leaders Forum, CVC Sustainable Investments Pty Ltd, the Australian Agricultural Company, and the Australasian Carbon Exchange Pty Ltd. Phillip has been President of Bush Heritage since 2000.

**Vice-President: Dr Steve Morton** BSc(Hons), PhD – Group Executive, CSIRO Manufacturing, Materials and Minerals Group. Steve is one of Australia's most respected ecologists. He has 23 years' experience with CSIRO as a research scientist in tropical northern Australia, arid central Australia and the southern temperate zone, and has worked to integrate biodiversity conservation and land use for grazing and agriculture. Steve joined the Bush Heritage Board in 2003.

**Treasurer: David Rickards** BSc, BEng, MBA – Executive Director and Global Head of Research at Macquarie Securities Group. David heads up the extensive and highly rated equities research group at Macquarie Securities Group, coordinating a team based throughout Australia, Asia, New Zealand and the United Kingdom. Before joining Macquarie, David was responsible for establishing a risk management company, BARRA International, in Australia, and worked as a consulting structural engineer with Maunsell. David is an authority on the equities market, with particular expertise in strategic analysis. David joined the Board in 2006.

**Dr Guy Fitzhardinge** BAgEcon, MAppSci, PhD – Managing Director, Thring Pastoral Company. Guy is currently a member of the Commonwealth Threatened Species Scientific Committee, Deputy Chairman of Desert Channels Queensland and Chairman of the CRC for Beef Genetic Technologies. He has previously been a director of Meat & Livestock Australia and the Meat Research Corporation, Vice-President of the Australian Rangelands Society, an advisor to CSIRO Wool and Textiles Division, the wool industry and WWF, and a ministerial appointee to the NSW Biodiversity Advisory Committee. He currently manages three properties and a large cattle herd in central NSW. Guy joined the Bush Heritage Board in 2003.

**Dr Sue McIntyre** BSc(Hons), PhD – Senior Principal Research Scientist, CSIRO Sustainable Ecosystems. Sue currently leads a research group working on sustainability in agricultural landscapes. She has 28 years of research experience in weed ecology, landscape ecology and conservation biology. Throughout her career Sue has sought to make complex ecological concepts understood as simple principles that enable land managers to put science into practice on their land. Sue joined the Bush Heritage Board in 2007.

**Andrew Myer** MBA (Melbourne Business School) – Chair, AV Myer Group of Companies Andrew has long been involved in investment, property development and management, film and philanthropy. He has produced and been executive producer of several Australian feature films and is a board member of the Melbourne International Film Festival. Andrew was for five years Director and Co-Vice-President of The Myer Foundation, is currently a Trustee of the Sidney Myer Fund and joined the Bush Heritage Board in 2007.

**Hutch Ranck** BScEcon – Managing Director, DuPont Australia/New Zealand. Hutch is also Group Managing Director of Dupont ASEAN. He is Chair of the Business Council of Australia's (BCA) Education and Innovation Working Group and represents the BCA on the Prime Minister's Science, Engineering and Innovation Council. He is a Director of Futuris Corporation. Hutch joined the Bush Heritage Board in 2006.

**Keith Tuffley** BEc, LLB, LLM Keith has been an investment banker for the past 17 years, the last six of which have been as a Managing Director with Goldman Sachs. In 2003 he was appointed Head of the Investment Banking Division and a member of the Board of Goldman Sachs in Australia, and in 2007 Keith relocated to London to lead the Industrials business across Europe, the Middle East and Africa. In recent years, he has completed the Advanced Management Program at INSEAD and the Goldman Sachs Non-Profit Leadership Program at Harvard Business School. Keith recently retired from the investment banking industry to pursue his interests in environmental issues. He is also a Director of the Great Barrier Reef Foundation and a Governor of WWF-Australia. Keith joined the Bush Heritage Board in 2006.

## Executive

### Chief Executive Officer

**Doug Humann** BA(Hons)Geog, DipEd Before coming to Bush Heritage, Doug spent eight years as Director of the Victorian National Parks Association, Victoria's largest member-based nature conservation organisation. He is a member of the World Commission on Protected Areas and has advised several governments on private protected areas. He won the Wild Environmentalist of the Year award in 1997 and was a finalist in the CEO of the Year awards in 2005. Doug was appointed CEO of Bush Heritage in 1997.

### Patron

**Bob Brown** – Founder, and Australian Greens Senator for Tasmania

### Ambassador

**Tim Fischer** AC – National Chair, Royal Flying Doctor Service

## President's report

**The last year continues Bush Heritage's extraordinary growth, with the acquisition of several new reserves: Yourka, Bon Bon and Edgbaston. This brings the land under our stewardship to almost 1 million hectares.**

Yourka is a diverse property of 43 500 hectares in Queensland, running west of the Great Dividing Range near Cairns. By virtue of its elevation, Yourka will contribute significantly to the ability of species to thrive under climate change, providing displaced animals and plants with more suitable habitats to move into.

Bon Bon Station is a vast 216 810 hectare property which secures classic arid land environments, including ephemeral wetlands. Bon Bon lies within a pastoral landscape and provides us with an outstanding opportunity to safeguard ecosystems that are currently not well protected in other reserves.

Bush Heritage's latest acquisition is Edgbaston Station in central Queensland. At 8100 hectares it is on a much smaller scale than Bon Bon, but its artesian spring complex fills an extraordinary evolutionary niche. Edgbaston contains a series of desert pools which source their water directly from the Great Artesian Basin. This water, which is between 10 000 and a million years old, is home to a host of unique species, including two species of fish, twelve species of snails and four plant species found nowhere else in the world. It's truly wonderful that we have been able to protect this unique biodiversity-rich environment.

We are aided in meeting our conservation objectives and securing properties such as these by wonderful partnerships and the generosity of many people including the Australian government, the National Reserve System program, the US-based Nature Conservancy, The Thomas Foundation and Allens Arthur Robinson. Importantly and vitally, we also rely on thousands of Australians to provide us with the financial means to support us in the long and difficult business of maintaining good management regimes on the ground. We thank all these people.

Bush Heritage has a unique focus on cooperative engagement with Indigenous people. We now have close ties with the Kaanju people of Cape York, as well as working in partnership with the Balkanu Cape York Development Corporation and the Traditional Owners of Carnarvon Station Reserve, the Bidjara people.

In a year where all of us have felt the strain of tightening economic conditions, whether from rising interest rates, increased oil prices or other financial and environmental constraints, it is remarkable yet again that our supporters continue to provide the funds needed to ensure that these unique properties and the life they nurture is protected long into the future.

The cohesiveness of the Board of Bush Heritage is readily apparent and it is a pleasure to chair such a talented and hardworking group. The Board is working effectively together and with management to chart Bush Heritage's future. With the tremendous growth already achieved by Bush Heritage and with more planned, the Board continually reviews how best to operate and is particularly focused on the growing financial burden of managing well our huge and growing reserve estate. In the last year a comprehensive Board committee structure has been introduced to better oversee finance, conservation, marketing and Indigenous engagement.

Bush Heritage, which started out in 1991 as the inspiration of Bob Brown – protecting just 236 hectares of endangered Tasmanian forest – is now a major player in conservation in Australia. This is testament to the continuing relevance of our work and the broad-based support that we have attracted.

Through partnership and cooperation across Australia, we are continuing to meet and exceed our goals for excellence in land and water conservation. Together, we are working to protect our country's unique animals, plants and their habitats.

Phillip Toyne, President

From left: Fruit of the burrawang (*Macrozamia communis*), Brogo Reserve, NSW. PHOTO: WAYNE LAWLER/ECOPIX A hopbush, Yarrabee Wesfarmers Reserve, WA. PHOTO: JIRI LOCHMAN/LOCHMAN TRANSPARENCIES

## Chief Executive Officer's report

**Bush Heritage's acquisition and partnership objectives have experienced extraordinary growth in the last twelve months as we move toward our 2025 goal of protecting 7 million hectares of land.**

Most importantly, this growth is reflected on the ground in outstanding property acquisitions and management practices. However, it is also supported by the development of robust management systems and by an extraordinary and dedicated team of staff, volunteers, partners and supporters.

This last year also saw the recruitment of a new Chief Conservation Officer, Nicki Markus, who, with the Chief Marketing Officer, Pamela Sutton-Legaud and the Chief Financial Officer, Annette Stewart, represent the organisation's key strategic management team. These three senior women provide leadership to each of the Conservation, Marketing and People & Finance teams.

In 2007 Bush Heritage identified a series of objectives to work towards over the next five years. These included supporter, finance and communication objectives, and we are well on the way to meeting or exceeding them. Our conservation objectives are focused on high value and threatened places in our landscape where we can make a difference in the long term. At the end of June 2008 Bush Heritage was protecting 946 000 hectares of Australia. Together, these reserves safeguard more than 242 vegetation communities, including at least 83 that are listed as of high conservation value. Over 2700 plant species, including at least 250 of conservation significance, and at least 532 wildlife species, including 195 that are known to be threatened, are now protected on the reserves.

To ensure the effectiveness of our conservation work we continue to monitor key indicators of the ecological health of our properties through our pioneering Ecological Outcomes Monitoring program. This is generously supported by the Macquarie Group Foundation. We now have more than 400 monitoring sites established across 18 reserves, where we collect data on the bird community, vegetation structure and soil surface condition – indicators we use to monitor progress towards our conservation goals. More results from our monitoring program in south-east Australia are included in this report.

The period between January 2007 and June 2008 has been particularly successful for Bush Heritage as we have:

- acquired six new reserves totalling 271 064 hectares
- initiated six on-ground Indigenous partnerships including at Cape York and in the Kimberley, Arnhem Land, central Queensland and south-western Australia
- undertaken extensive capital expenditure on reserves, especially to install solar power
- created new staff teams to focus our conservation activity, and recruited 50 new staff
- launched and consolidated a vibrant new logo and website and had unprecedented media exposure
- welcomed more and more new supporters and volunteers and reviewed our volunteer and visitation programs in an effort to attract and retain more volunteer support.

We applaud the work of our staff, including our tireless volunteers, in the bush. Working in sometimes extreme environments, they are bringing ecosystems back to health and uncovering new and rare gems every day, from new plant species to rare species rediscovered (for example, a remote-installed infrared camera at Carnarvon Station Reserve recently photographed a northern quoll, until now thought to be regionally extinct). These exciting discoveries sit alongside the continuous improvement in condition we see on our reserves through science-based and practical fire, weed and feral animal management.

In the last twelve months we have been particularly targeting the Gulf to Lake Eyre anchor region and we are confident of a major announcement there before long. In the meantime we are building our partnerships across the country to enable us to do our conservation work more effectively.

Doug Humann, Chief Executive Officer

From left: Artesian spring on Edgbaston Reserve, Qld. River red gums in dry sandy creek bed, Millerooka Pad, Boolcoomatta Reserve, SA.
PHOTOS: WAYNE LAWLER/ECOPIX

## A strategic approach to conservation

**Experts believe that Australia needs to have an additional 22 million hectares under conservation management if we are to protect a representative core of our biodiversity. Bush Heritage has set itself the task of contributing one third of this area, and aims by 2025 to protect more than 7 million hectares of land. This undertaking is critical if we are to save endangered species and habitats and return our ecosystems to health.**

To achieve this goal Bush Heritage is working with many partners to identify these critical areas and then to manage them for conservation. Our first step has been to develop a national strategic approach to our conservation work, titled the 'Anchors in the Landscape Conservation Framework'. Under this framework, we have selected five key regions in which to work by investing in long-term conservation activities. The regions chosen:

- have recognised outstanding biodiversity values at the national level that are threatened by unsustainable land management practices, and
- strategically position us where we can create effective partnerships with key land-owners such as Indigenous groups, governments and pastoral companies.

Within each region, we are identifying and acquiring 'anchor' points at strategic locations in the landscape, around which we are developing a broader network of protected land through the use of various land protection mechanisms and partnerships models. We will, however, continue to acquire some outstanding properties and to develop significant partnerships outside these regions.

We are targeting the most important landscapes for conservation, not just in terms of where rare and threatened species occur or where ecosystems are poorly represented in existing reserves, but also in terms of how ecosystems work. Ecological 'source' areas – highly fertile land – and landscapes that retain the ability to bounce back quickly following disturbance ('resilient landscapes') are also being targeted by Bush Heritage.

### Saving 'source' areas and 'resilient landscapes'

From Tasmania to the Kimberley, Australia's most fertile land is rarely found in reserves.

Today, we understand that land that is productive for human use is also productive for native species and ecosystems. Unless we adequately protect source areas such as valley floors, rivers, wetlands, springs and 'flood-out country', we will lose the places where many species breed or find refuge during events such as drought or fire, or larger scale events such as climate change. If we fail, these species will, over time, struggle to survive in the surrounding landscape.

Resilient landscapes tend to be those that remain in least modified condition and occupy large or even vast areas. Not only do resilient landscapes tend to bounce back quickly from disturbances such as wildfire, floods and high winds, but they are also naturally more resistant to weed and feral animal invasions, ensuring that our management effort is more successful and cost-effective over the long term.

### Identifying the most important landscapes with BioPrEP

Bush Heritage is now identifying target landscapes and properties using an innovative approach called BioPrEP (Biodiversity Prediction using Ecological Processes). BioPrEP was developed by the Bush Heritage ecology team and researchers from the Australian National University and the Bureau of Rural Sciences. BioPrEP builds a 'picture' of Australia's most important landscapes and properties by combining spatial information that represents resilience and productivity with additional information on the level of ecosystem protection in reserves, the presence of rare or threatened species and the likelihood of future threats.

To date, BioPrEP has been used to examine two of our key regions. The others will be analysed during the next twelve months, over which time the results of our trial phase will be published in a peer-reviewed journal and presented at a scientific conference.

*continued overleaf*

From left: Mountain yapunyah open woodland on the escarpment of the Alice Tableland, Edgbaston Reserve, Qld. Soakage in the Herbert River catchment, Yourka Reserve, Qld. PHOTOS: WAYNE LAWLER/ECOPIX

## Monitoring what we do

As our land management work expands, so we need to know if our efforts are being effective in reaching our conservation goals. Our Ecological Outcomes Monitoring program provides the answers by measuring changes through time in the condition of the soil, vegetation and fauna. This allows us to track the general health of the land, including the most significant species and habitats, and its progress towards specified conservation goals.

Over 400 ecological outcomes monitoring sites have been set up across our existing reserves, and new sites are established on new reserves soon after their purchase.

Building on last year's *Annual Conservation Report*, this year we present further results showing how we are progressing towards our management goals. Each goal is measured using an 'indicator', such as the condition of the soil surface or browsed vegetation, or the population numbers of a threatened species. All these indicators provide a good measure of some aspect of ecosystem health.

As with our BioPrEP work, we also plan to publish and present both the structure and results of our monitoring program in appropriate fora and scientific journals.

## Working beyond reserve boundaries

Achieving many of our long-term conservation goals will not be possible if we focus simply on land that we do or can own. Given that fence lines take little notice of ecosystems, the health of systems and species protected by our reserves is inevitably affected by the activities of our neighbours and other land users further afield, and vice versa. The growing awareness of the impacts of climate change also makes all the more urgent the need for an integrated approach to land management across large areas.

Over the past two years we have been building partnerships to help deliver conservation benefits on land owned by others. We describe these activities as working 'beyond the boundaries' of our traditional acquisition approach to conservation. Our partnerships are guided and measured by the same rigorous ecological tools we use for buying properties, but are developed over a longer time as they depend on the ongoing relationship between Bush Heritage and the landholder or manager.

At the individual property level, we of course work closely with all our neighbours 'over the fence' to coordinate the management of things such as fire and feral animal species. Working 'beyond the boundaries' is much more than this essential activity – it means identifying particular properties in the landscape critical to our conservation success and establishing a formal working relationship.

Long-term landscape partnerships involve many groups, extend over large areas and incorporate many individual projects, including land acquisition, landscape restoration, conservation covenants, support for landholder actions and the coordination of regional fire management. Kosciuszko to Coast in New South Wales, Gondwana Link in Western Australia and a new cooperative project in the Midlands of Tasmania (see pages 24–5) are examples of such landscape partnerships. As well as purchasing properties, Bush Heritage contributes to employing and managing facilitators and coordinators, planning and developing the broader projects and then planning the detailed actions needed on the ground.

We also directly support conservation planning and on-ground management on Indigenous lands on Cape York and in Arnhem Land, with new projects beginning in other regions such as the Kimberley and Gulf of Carpentaria. While still in their early days, these individual property and regional

From left: Dolerite spires of Drys Bluff in the Great Western Tiers, Liffey Valley reserves, Tas. PHOTO: WAYNE LAWLER/ECOPIX Max Tischler from Sydney University's Desert Ecology Group with a group of supporters and staff, Ethabuka Reserve, Qld. PHOTO: AJ EMOTT

partnerships promise enormous conservation benefits due to their scale, location and the significant species they target. Opportunities that occur in areas outside of our priority regions are carefully reviewed to ensure they contribute to our overall goals.

## Encouraging research

We have more than 20 research partners currently working on Bush Heritage reserves on subjects ranging from truffle-eating beetles to fish recruitment in ephemeral desert waterholes. These partners provide detailed technical and ecological knowledge that improves our understanding of the land under our care. For example, the Desert Ecology Group at Sydney University continues its long-term study of the ecology of desert animals at both Ethabuka and Cravens Peak reserves. As we become more proactive in our research partnerships, other exciting initiatives will be established over the coming year for a number of reserves including Nardoo Hills, Scottsdale, Edgbaston and Boolcoomatta.

This year we plan to carry out further targeted baseline surveys at Bon Bon, Edgbaston and Yourka in conjunction with state and regional bodies including CSIRO, Desert Channels Queensland and the Department of Environment and Heritage in South Australia. Bush Heritage's ecological outcomes monitoring methods (see page 10) will also be expanded on partnership properties. Work is already under way at a Greening Australia (WA) property, Nowanup, which is part of Gondwana Link, and bird monitoring will be stepped up on properties around our Nardoo Hills reserves in Victoria by the Wedderburn Conservation Management Network.

## Reporting on the outcomes

Bush Heritage is collaborating with a number of similar international organisations to develop ways to report accurately on the biodiversity outcomes achieved by the dollars invested in conservation. This project, **In**vestment in **C**onservation and **Re**source Manage**ment**, or '**Increment**', was funded by the Australian Government's Natural Heritage Trust and Land & Water Australia. Increment is a process those providing biodiversity management can use to specify and report on investments and their outcomes, and will be adopted by Bush Heritage over the next few years as we build our conservation science program.

## Thanks

Our list of collaborators across the country is vast and we thank them all. It is not possible to list them all here, but particular thanks are due to Professor Chris Dickman and the Desert Ecology Group, Sydney University; Jeremy Wallace, CSIRO (VegMachine); Brendan Mackey, Australian National University, and Rob Lesslie, Bureau of Rural Sciences (BioPrEP); Eddie van Etten and Will Stock, Edith Cowan University; Rod Fensham, Queensland Herbarium; Martine Maron and Alison Howe, University of Queensland; Nic Dunlop, Conservation Council of Western Australia; the Wildflower Society of Western Australia; the coordination teams, and the many partners and participants in the Gondwana Link, Kosciuszko to Coast, Wedderburn Conservation Management Network and Tasmanian Midlands projects; Balkanu Cape York Development Corporation; Indigenous Land Corporation; Warddeken Land Management Limited, Wunambal Gaambera Aboriginal Corporation; members of our Indigenous Advisory Group; Aboriginal Traditional Owners working with us on 'country' throughout Australia; Rob Richards (Increment) and Ian Watson (Pastoral Partnerships).

The following pages showcase many, but by no means all, of our reserves and partnerships.

From left: Mal Graham and a student from Christchurch Grammar show off the fauna at Chereninup Creek Reserve, WA. PHOTO: MARK MORRISEY
Sunbird at Yourka Reserve, Qld. PHOTO: WAYNE LAWLER/ECOPIX

# South-West Botanical Province anchor region

## Reserves in this region

Charles Darwin Reserve ■ Chereninup Creek Reserve ■ Eurardy Reserve ■ Kojonup Reserve ■ Monjebup Reserve ■ Peniup Creek Reserve ■ Yarrabee Wesfarmers Reserve

## Conserving creeks

**Creeks have been identified as one of six conservation targets in the Gondwana Link–FitzStirling area as part of the Functional Landscape Plan for the region.**

### Background

Creeks were chosen as they have been badly affected by land clearing and subsequent land management practices. The resulting influx of salt, sediment, nutrients, chemicals and weeds in these important habitats has resulted in a decline in their condition. Revegetation and other improved land management practices (perennial pastures, high water-use crops, etc.) in the catchments should alleviate this and we are monitoring them long term to ascertain the degree of improvement.

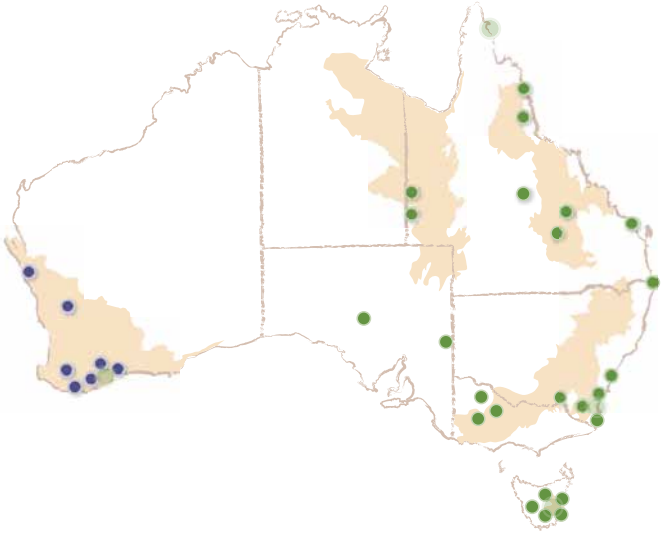
Chereninup, Monjebup, Peniup Creek and Yarrabee Wesfarmers reserves all have creeks running through them. The creeks are naturally saline and flow only intermittently; most of the time the channels consist of dry stretches interspersed with permanent or semi-permanent pools.

### Goals

By 2017 we aim to significantly improve the condition of at least 60 per cent of the creeks within the Corackerup, Monjebup and Mid-Pallinup subcatchments (encompassing, respectively, Peniup Creek, Chereninup and Nowanup reserves; Monjebup Reserve; and Yarrabee Wesfarmers Reserve). This will be done through a combination of restoration of native vegetation, providing practical management information to other land owners, and forming partnerships with other land managers to assist in minimising impacts on creeks.

### Activities

Areas of the reserves which had been cleared are undergoing an ongoing revegetation process. This restoration of perennial native vegetation is being carried out in liaison with Gondwana Link partner Greening Australia (WA). This will have the effect of preventing excess water, nutrients and chemicals from entering creek lines. Bush Heritage has also been monitoring water quality in creeks, monitoring vegetation condition along the creek banks and working with neighbours to repair catchments. For example, areas of soil erosion are being



From left: Lichen on broombrush, Chereninup Creek Reserve, WA. PHOTO: BARBARA MADDEN Swamp paperbark at Peniup Creek Reserve, WA. PHOTO: CHINCH GRYNIEWICZ

identified and steps taken to repair erosion gullies on farmland using a combination of on-ground earthworks and revegetation.

### Results

Some 125 kilometres of the Corackerup Creek system (one of the subcatchments of the Pallinup River) has now been assessed. Its condition varies from 'very good' in well-vegetated areas to 'poor' in highly cleared areas. During the surveys we were surprised to find fresh evidence of water rats and long-necked turtles, both of which are close to their eastern limit of distribution in the area. These animals are poorly studied and few historic records exist to tell us just how common they used to be. Being at the top of the food chain, they are thought to indicate a healthy aquatic ecosystem.

A variety of inland fishes and macroinvertebrates, some of which are still being identified by researchers, has been recorded in the permanent pools. A total of 66 species of birds were seen in the area during the on-ground creek assessments.

It may be some time before we see an improvement in the condition of creeks after revegetation. In the meantime we will continue monitoring the progress of the revegetation, the water quality and the condition of the creek-side vegetation to help assess our success and further improve our land management.

## Adaptive land management

**A combination of bushland, cleared farmland, creek lines and naturally regenerating areas on Peniup Creek Reserve in the Gondwana Link–FitzStirling area provides myriad opportunities for learning and practising adaptive land management.**

### Background

The 2406 hectare Peniup Creek Reserve was purchased jointly by Bush Heritage and Greening Australia (WA) in 2007. It contains 937 hectares of bushland, 1249 hectares of cleared land and 220 hectares that is naturally regenerating.

At least five of the six conservation targets that have been identified in the Functional Landscape Plan for the area occur on the reserve: yate woodland, mallet/moort woodland, Tammar and black-gloved wallabies, and the health of creek and freshwater systems.

A comprehensive revegetation plan using the native yate (*Eucalyptus occidentalis*) and other species (all of which will sequester carbon) is being implemented by Greening Australia in liaison with Bush Heritage.

### Goals

We have two major goals for Peniup Creek Reserve:

- Improve the condition of Hegarty and Peniup creeks, both of which are in generally good condition but require erosion and saline groundwater control in their catchments.
- Restore native vegetation to the cleared areas (which will help to address the above).

### Activities

In the twelve months since its purchase, much of the activity on Peniup Creek Reserve has revolved around collecting baseline data including:

- assessing the condition of fringing vegetation (riparian zone)
- identifying areas of active erosion and planning their repair
- providing input into Greening Australia's revegetation plan
- measuring water quality in pools
- conducting bird activity surveys
- conducting vegetation and soil surveys.

### Results

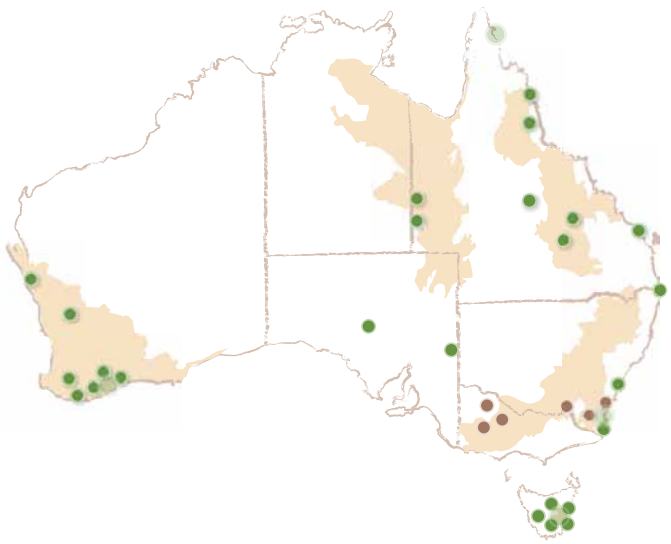
The information collected in the past year has highlighted the wealth of opportunities on this diverse property. The creeks and their fringing vegetation have been assessed as being generally in good condition. Water-quality monitoring has shown that a wide variety of water-quality conditions exist in the various pools in the same creekline. Bird surveys have shown that the bushland areas support their original suite of avian species and the surveys of the farmland have provided a valuable baseline from which to measure the success of the revegetation in terms of providing a habitat for birds. Tammar and black-gloved wallaby monitoring will provide baseline information for the proposed regional fox-baiting program currently being planned for the Gondwana Link Fitz-Stirling area.

From left: Freshwater pool and granite outcrop in bushland, Chereninup Reserve, WA. PHOTO: CHINCH GRYNIEWICZ Black-gloved wallaby (*Macropus irma*), South-West Botanical Province, WA. PHOTO: ALECIA CARTER The machine that cleared the land on Peniup Creek Reserve, WA, is now overgrown with regenerating bush. PHOTO: AMANDA KEESING COURTESY OF GREENING AUSTRALIA (WA)

# Ecological Outcomes Monitoring report – South-East Grassy Box Woodlands anchor region

## Reserves in this region

Scottsdale Reserve ■ Tarcutta Hills Reserve ■ Nardoo Hills reserves ■ Burrin Burrin Reserve ■ Brogo Reserve



## Ecological outcomes monitoring

**Once a property is under Bush Heritage management we have an ongoing responsibility to care for that land and its animals and plants. We have identified six broad goals that represent the conservation outcomes our land management strives to achieve (see 'Conservation goals'). What we do on the ground – the way we use fire, manage eroded sites and weed infestations, control pest animals and grazing pressure, and protect waterways – will affect the way ecosystems function, as well as the plants and animals within them. Therefore, it is critical that we monitor the effectiveness of our management, both to make sure we are heading towards our conservation goals, and to alert us to when we need to change course. Bush Heritage has established the Ecological Outcomes Monitoring program to provide this feedback.**

The Ecological Outcomes Monitoring program is structured around our conservation goals (see opposite page). Each goal has a set of standards or criteria by which progress towards that goal can be assessed. In turn, each criterion has a suite of key indicators, which are reserve-specific measures of ecological condition. By monitoring change in key indicators in relation to our management actions and natural variability in the environment, we can track progress towards our conservation goals. The monitoring also helps us to build a sound understanding of the ecology of the land, evaluate the effectiveness of our management, and demonstrate the conservation return on investment to our supporters and donors. Where possible, we also invite Traditional Owners to add their knowledge to help guide our land management activities.

A fundamental part of this strategy is the establishment of permanent monitoring sites that are carefully selected to sample key conservation values, environmental gradients, supporting and threatening processes, and management actions. Indicators are then measured regularly at these sites to provide reliable and robust information about the condition of the ecosystem. Many useful indicators are derived from

From left: The rare northern golden moths orchid, newly discovered at Nardoo Hills Reserve. PHOTO: PAUL FOREMAN Dragon basking on a log, Scottsdale Reserve, NSW. PHOTO: STUART COHEN Fauna monitoring. PHOTO: JULIAN FENNESSY

## Conservation goals

**Bush Heritage's acquisition and land management strategies aim to:**

1. Maintain or restore ecological function. This refers to the biophysical processes that are the building blocks of healthy ecosystems: for example, water retention and infiltration, decomposition of organic matter and soil production, and growth of plant material.
2. Maintain or restore the viability of key species. Our goal is for native species, especially threatened, keystone and locally endemic species, to be able to persist indefinitely without direct human intervention (e.g. translocation, supplementary feeding or predator-proof fencing).
3. Maintain or restore functionally integrated communities. In a healthy ecosystem, each species has one or more functional roles (e.g. pollination, predation, scavenging, decomposition) that support or regulate other species and functions.
4. Maintain or restore natural disturbance regimes. Natural disturbance events (e.g. fire, flood, tree-fall) are an important part of healthy landscapes: our goal is to allow these events to occur at their natural frequency, intensity, duration, patchiness and magnitude.
5. Increase ecosystem resistance. This refers to the capacity of an ecosystem to withstand disturbances such as extreme climate events, drought or pathogens.
6. Increase ecosystem resilience. This refers to the capacity of an ecosystem to recover following disturbances, such as fire, drought or weed invasion.

three routine methods: bird surveys (see 'Monitoring the bird community'), vegetation structure transects and soil surface condition assessments (see 'Monitoring vegetation structure and soil'). Other methods, such as satellite imagery, floristic surveys, exclusion plots and mammal and reptile surveys

*continued overleaf*

## Monitoring the bird community

**Birds are good indicators of ecosystem health. Moreover, birds can be 'read' to help identify management problems and propose solutions. For example, the status of different feeding groups, or 'guilds', reflects the availability of their food, such as grass seed, fruit, nectar, insects, small vertebrates, or fish and other aquatic animals.**

The absence or decline of a particular guild, or indicator species, suggests something is amiss with that part of the ecosystem. Birds are also highly mobile: if food runs short in one place, they readily move to a more productive site. Thus, change in the bird community provides rapid feedback about the condition of the ecosystem. Some species have specialised nesting requirements, such as hollows or sandy banks. The status and trend of these species gives further clues about other parts of the ecosystem. Generally the greater the diversity and abundance of birds, the more complex and productive the environment, indicating it is in good condition.

At designated monitoring sites, birds are surveyed using Bush Heritage's standard bird survey method, called 'bird-minutes'. A bird-minutes survey consists of a 20-minute point-count, during which the number and distance of all birds detected from a central survey point is estimated. The unique aspect of bird-minutes is that the count is 'reset' every minute, such that each survey actually consists of 20 consecutive one-minute surveys. This method enables several useful indicators to be accurately calculated for each species. In addition to presence or absence, we are able to derive an unbiased estimate of relative abundance and 'instantaneous' density for each species encountered. Species data can then be aggregated to generate summary indices of the entire community or for particular feeding guilds. Data from bird-minutes surveys is compatible with standard Birds Australia 20-minute, two-hectare surveys. This is important for integrating our results with existing information from the surrounding landscape.

From left: Colourful bark on a eucalyptus tree, Scottsdale Reserve, NSW. PHOTO: STUART COHEN Yellow-tailed cockatoos, Scottsdale Reserve. PHOTO: JIRI LOCHMAN/LOCHMAN TRANSPARENCIES

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are also used, depending on the key conservation values of, threats to and management responses needed at a particular reserve.

In the following pages we present results from the first two years (2006 and 2007) of ecological outcomes monitoring on two reserves in the South-East Grassy Box Woodlands anchor region: Nardoo Hills and Tarcutta Hills. Monitoring on Scottsdale Reserve commenced in 2007 and sites at Burrin Burrin Reserve and Brogo Reserve were established this year and will be monitored for the first time in spring 2008. Although it may be several years before our management brings about change in ecological condition, the information so far collected provides vital baseline data for future comparisons and enables us to examine the variability in indicators in relation to environmental factors such as rainfall.

## Nardoo Hills reserves

**The compounding effects of drought and grazing pressure present ongoing challenges to our efforts to revitalise the woodland vegetation and the threatened fauna it supports on the Nardoo Hills reserves.**

### Background

The Nardoo Hills reserves in north-central Victoria consist of three adjoining properties, including the Judith Eardley Reserve. These reserves protect one of the larger remnants of grassy woodland vegetation in the region and support many species of declining woodland fauna, including several birds such as the hooded robin, southern whiteface and brown treecreeper. The abundance of large, mature trees provides valuable resources, such as hollows for goannas, bats, gliders and treecreepers, and nectar for honeyeaters and lorikeets. The grassy woodlands on the lower slopes, herb-rich hillcrest woodlands and fertile drainage lines also support a diverse flora of native grasses, herbs, orchids, daisies and wattles.

The region has been severely impacted through clearing for grazing and cropping, especially on the lower slopes and valleys, which make these areas on the Nardoo Hills reserves particularly important. The ongoing dry conditions continue to limit growth and repopulation of many native plant species, especially with the added burden of grazing by sheep, rabbits, kangaroos and wallabies, and the encroachment of invasive weeds. Managing the landscape to ease the stress imposed by these threats has been the focus of our actions at Nardoo Hills.

### Goals

- Restore ecological processes to enable capture and retention of resources. Indicators: soil surface condition; primary productivity; rate of gully erosion.
- Restore the viability of key species and species groups (such as declining woodland birds and palatable plants) by re-establishing high-quality habitat. Indicators: abundance of key species; abundance of functional guilds.
- Restore the health of vegetation communities. Indicators: vegetation structure; recruitment and growth of palatable species; floristic diversity.

### Activities

There has been an intensive and sustained rabbit control program at Nardoo Hills, with 130 rabbit warrens having been mapped, fumigated and sealed. These efforts have been largely successful, with more than 70 per cent of burrows remaining sealed and inactive after the second monthly treatment. Ongoing monitoring and repeat treatments are labour-intensive and costly but critical for reducing total grazing pressure, particularly along drainage lines and on the fertile fringing plains.

Teams of volunteers have been assembled to crack down on the invasive wheel cactus which was formerly widespread throughout the reserve but has now been largely eradicated. Monitoring and follow-up will be required to ensure seedlings do not re-establish within the reserves. Weed control efforts are now concentrating on Patterson's curse, with spray teams deployed across the worst affected areas, which are usually old sheep camps.

*continued overleaf*

From left: Grassy woodlands provide vital habitat for declining woodland birds at Nardoo Hills Reserve, Vic. PHOTO: DAVID TATNALL
Pale sundew at Nardoo Hills Reserve. PHOTO: JAMES COWIE

## Monitoring vegetation structure and soil

**Plants grow, flower and seed prolifically or poorly depending on the soil, terrain, climate and weather. As they grow, shed bark, leaves and fruit, are eaten by insects and other animals, decompose and release their nutrients back into the soil, they influence other plants growing around them and provide energy for the food chain. Understanding the factors that limit or stimulate growth is particularly important for fire management and enhancing the recovery of overgrazed or degraded land.**

We monitor vegetation structure using a simple transect-intercept method. A transect is a line (in this case, usually 50 metres long) permanently marked out at a monitoring site. We then record the height of different layers (or strata) of vegetation, the dominant species in each stratum, and where they cut across the transect (see Figure 1a). This simple technique provides useful information about vegetation structure, such as the number and percentage cover of different strata and the complexity of the vegetation profile, which are good indicators of habitat condition for plants and animals. Trends in change in vegetation structure over time can then be related back to our management interventions.

By virtue of capturing and retaining water, organic matter and nutrients, and providing the physical medium in which plants grow, soil is the foundation upon which the rest of the ecosystem depends. Soil surface attributes may not be the 'sexiest' part of the ecosystem to monitor but they are some of the most important. Different types of ground cover (e.g. fine leaf litter, fallen logs and branches, moss and lichen, rocks and gravel, bare earth) trap resources at different rates. We use the transect-intercept method to quantify the extent and patterning of different ground cover types, and thus monitor change in the ability of the soil to capture resources.

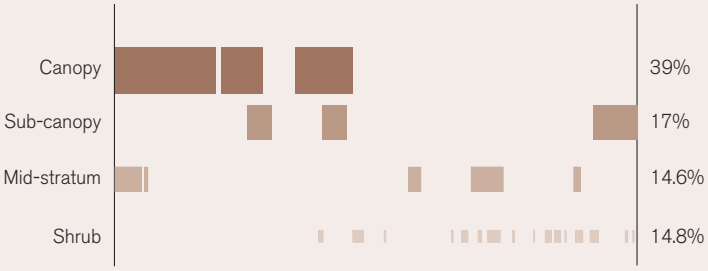


**Figure 1a** Vegetation intercept


**Figure 1b** This vegetation transect reflects the information graphed on the left

From left: Chocolate lily, Nardoo Hills Reserve, Vic. Late afternoon, looking over Mount Korong, Nardoo Hills Reserve. PHOTOS: JAMES COWIE

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The drooping sheoke *Allocasuarina verticillata* is a key component of the hillcrest woodland on the higher slopes and ridges. While the older trees are slowly maturing, there is virtually no regeneration because seedlings are highly palatable and continually browsed by wallabies and rabbits. Thus, dozens of individual seedlings have been fenced to protect them from herbivores and encourage regrowth.

Several cleared areas on the lower slopes that should support grassy woodland have been ripped and direct-seeded in an effort to re-establish the native vegetation. While the drought has undoubtedly reduced germination success and subsequent growth, some hardy individuals are showing signs of pushing through against the odds.

## Results

Nineteen monitoring sites on the Nardoo Hills reserves were surveyed for birds in 2006 and 2007. Despite the ongoing dry conditions, insect-eating birds appear to be faring well (see Figure 2). This is particularly encouraging because these birds are good indicators of overall ecological health as they are high in the food chain and many are year-round residents. Although this guild as a whole appears stable, hooded robins and southern whiteface were less common in 2007 and need to be watched carefully. These species are susceptible to changes in the understorey and their decline may reflect the dry conditions compounded by grazing and browsing by rabbits, kangaroos and wallabies.

Nearly all nectar-feeding species declined between 2006 and 2007 as no eucalypts flowered in 2007. These species are highly mobile and we would expect to see them return in 2008 with improved flowering in the box and ironbark woodlands. While the abundance of all seed-eaters appears steady, this is due to a large increase in the number of galahs

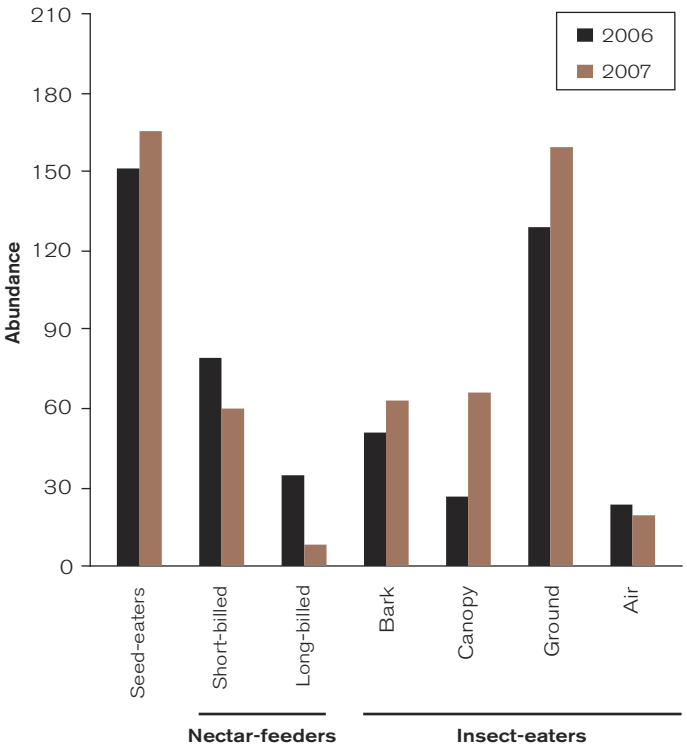
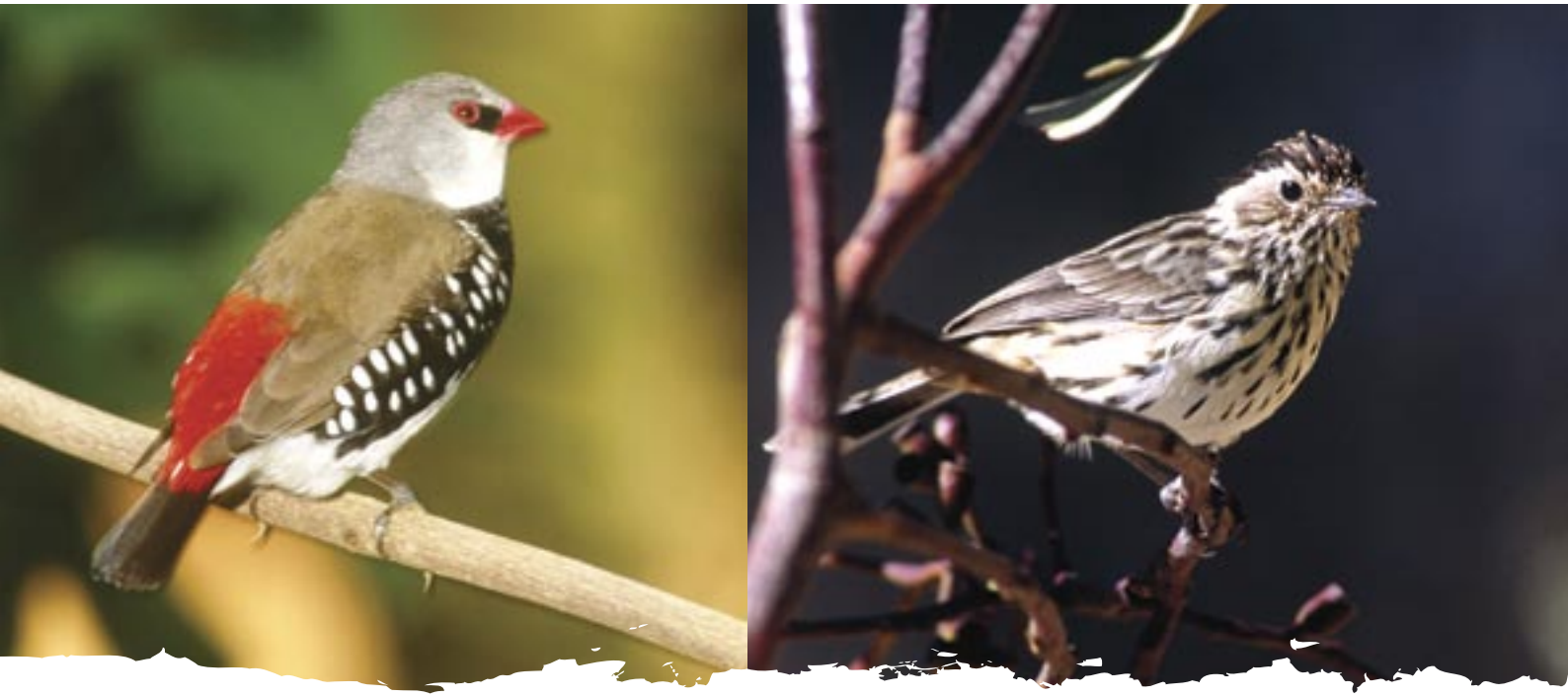



**Figure 2** Number of foraging birds of different types across all monitoring sites at the Nardoo Hills reserves in 2006 and 2007

recorded and masks a decline in smaller seed-eaters, such as the peaceful dove and the threatened diamond firetail. This worrying trend indicates that availability of native grass seed has decreased and suggests we may need to further reduce total grazing pressure.

To examine the impacts of grazing animals on grasses, herbs and shrubs, six exclusion plots were established by the Wedderburn Conservation Management Network soon after Bush Heritage acquired the first of the Nardoo Hills reserves



From left: Diamond firetail. Speckled warbler. PHOTOS: WAYNE LAWLER/ECOPIX

in 2005. Half of the exclusion plots exclude kangaroos, wallabies and rabbits; the other half excludes kangaroos and wallabies only. This design, over time, should allow us to separate the effects of rabbits from those of kangaroos and wallabies. The exclusion plots were formally monitored in spring 2005 and again in spring 2007, and are regularly checked by ecologist David Baker-Gabb.

There has been a large increase in overall grass and herb cover from 2005 to 2007 (inside and outside the exclusion plots) despite the dry conditions. This indicates that the removal of sheep has had substantial conservation benefit. Golden wattles provide one example of the impacts of herbivores on shrub growth: inside the exclusion plot they are sprouting and growing lush foliage, whereas outside the plot they are germinating but any leaves are soon devoured. Herbivores, not the drought, appear to be limiting growth. Other grazing effects have been detected: several small herbs, such as *Swainsona behri*, were virtually absent from areas grazed by rabbits but have been returning within the exclusion plots; likewise, kangaroo grass in the exclusion plots produced seed about six weeks earlier than plants outside the plots.

The real value of the Ecological Outcomes Monitoring program is the feedback it provides for adaptive management. At Nardoo Hills a pattern appears to be emerging. Although many parts of the ecosystem are holding up well in the face of very dry conditions, several indicators are providing an early warning that the grazing pressure exerted by rabbits, wallabies and kangaroos is adding stress that is sorely testing the resistance of the ecosystem. Our rabbit control program has been effective, but this may need to be complemented with other measures to reduce grazing pressure if several key conservation values are to be enhanced. We are currently collecting data from our third year of monitoring at Nardoo Hills and this will add further value to our decision-making processes.

## Tarcutta Hills Reserve

**The grassy woodlands, creek lines and dry forests on Tarcutta Hills Reserve remain in relatively good condition, providing refuge for fauna from the effects of the ongoing drought.**

### Background

Tarcutta Hills Reserve is situated on the south-west slopes of New South Wales, in one of the state's most heavily cleared and least protected bioregions. It contains significant remnants of grassy white box woodland, an endangered ecological community, as well as dry sclerophyll woodlands and forests on the slopes and ridges. A host of woodland fauna, many of them of high conservation significance, either reside in or visit these woodlands to feed and breed. Being able to maintain the structure of these woodlands, and their many functions, within the reserve is an important contribution to the conservation of regional populations of these species. To do this, our land management strategies must tackle threats posed by weed invasion, feral animals, stock incursions from surrounding properties, excessive grazing by kangaroos and wallabies, and bushfire. A large and intense fire has the potential to severely reduce the conservation values of the reserve, ensuring that fire management is a high priority.

### Goals

- Maintain and restore the condition of woodland vegetation communities. Indicators: vegetation structure; recovery of native grasses; floristic diversity.
- Restore the viability of key species (such as declining woodland birds and the squirrel glider) by maintaining and re-establishing high-quality habitat. Indicators: abundance of key species; abundance of functional guilds.

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From left: Southern whiteface. Crested shrike-tit. PHOTOS: ROB DRUMMOND/BIRDS AUSTRALIA

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## Activities

In the last year, activities have concentrated on improving access to and through the reserve. This is critical to improve our fire-prevention and fire-fighting capabilities. A new bridge allowing direct access from the Hume Highway has recently been completed, and a number of new fire trails have been carefully hand-cleared. This will improve our capacity to carry out fuel-reduction and ecological burning strategically, and to control unplanned fires. Regular weed control (spot-spraying) also reduces fuel loads and competition for native grasses. Opportunistic control of feral animals occurs during routine patrols to maintain fences and return stray stock to the neighbours.

## Results

We have fifteen monitoring sites established on Tarcutta Hills that were surveyed for birds in 2006 and 2007. Early results reveal striking variability in the bird community. In 2006 there was ample flowering and seed production accompanied by an influx of nectar-feeders, such as the red wattlebird, noisy friarbird and black-chinned honeyeater, and seed-eating species like rosellas and doves. These species moved out in 2007 when the food supply dwindled as rainfall decreased (see Figure 3). In contrast, the abundance of insect-eaters generally increased, with good numbers of ground-foraging species like the buff-rumped thornbill, eastern yellow robin and jacky winter, and bark-foragers such as the near-threatened brown treecreeper and crested shrike-tit. The number of insectivorous species also increased in 2007 as several species usually found in drier country moved into the reserve (e.g. the red-capped robin and western gerygone). This suggests that

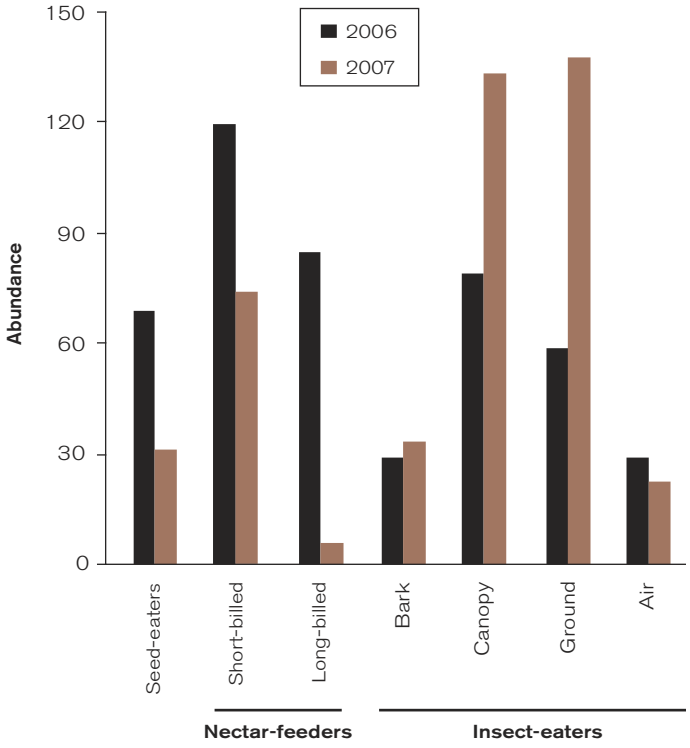



**Figure 3** Number of foraging birds of different types across all monitoring sites at Tarcutta Hills Reserve in 2006 and 2007

Tarcutta Hills remains in good condition, is retaining its critical resources well (especially in the often-degraded ground layer) and is acting as a drought refuge for many species.

One complete round of assessments of vegetation structure and soil surface condition has been completed, providing a baseline for future comparisons. Vegetation structure depends on land-use history, vegetation type and recent climatic

From left: Staff and volunteers building a bridge at Tarcutta Hills Reserve, NSW. PHOTO: GLEN NORRIS Natural understorey, Tarcutta Hills Reserve. PHOTO: WAYNE LAWLER/ECOPIX

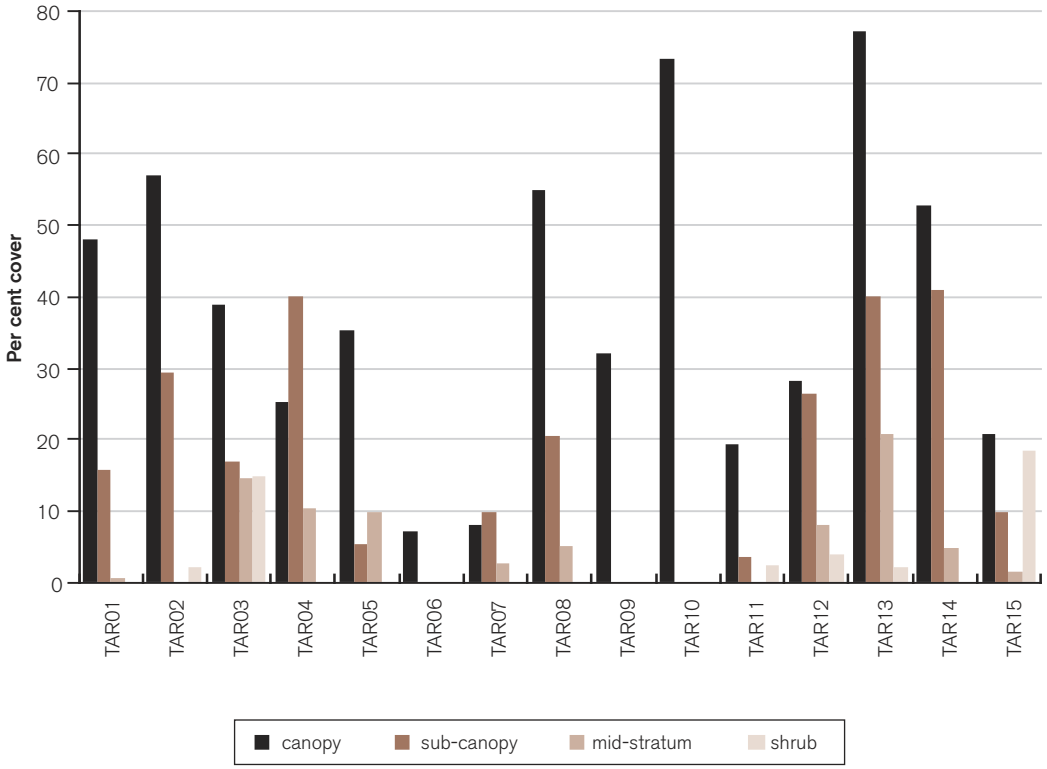



**Figure 4** Per cent cover of vegetation strata in spring 2007 at each monitoring site on Tarcutta Hills Reserve, NSW

conditions, and thus is highly variable between sites (see Figure 4). Because our monitoring sites intentionally sample a cross-section of these factors, comparisons between sites are not the 'main game'; their real value will be revealed as we repeat the surveys at each site and build a picture of the trend through time in indicators such as per cent cover of each vegetation stratum.

The Ecological Outcomes Monitoring program is generously supported by the Macquarie Group Foundation.

Macquarie Group Foundation

Woodland at Tarcutta Hills Reserve. PHOTO: WAYNE LAWLER/ECOPIX

# Bush Heritage reserves and major partnerships

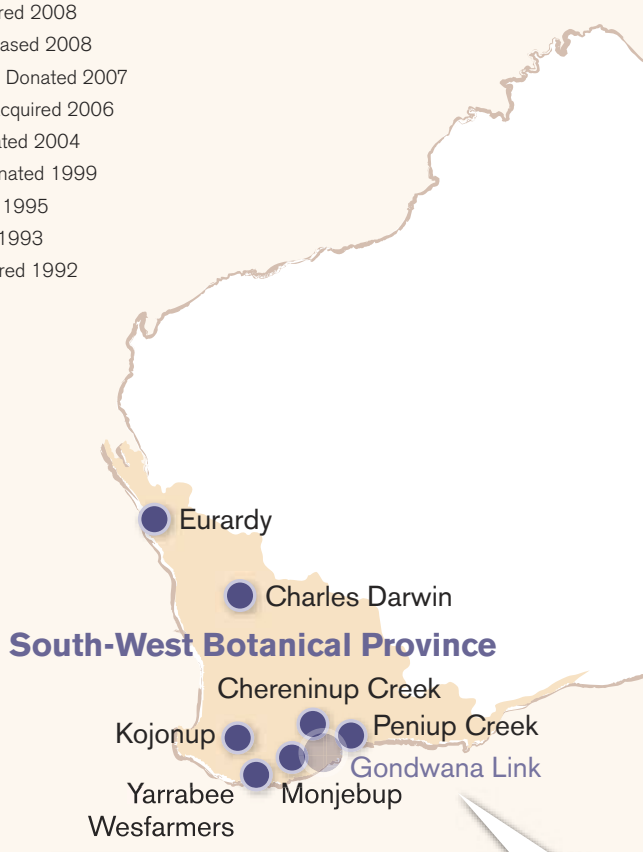
**Many of Australia's unique animals, plants and ecosystems are facing serious decline and in some cases extinction unless active measures are taken to protect them. How can we make a difference? The answer is simple. We can invest our resources in conservation management, the land that supports these threatened ecosystems and the species that live in them.**

By 2025 Bush Heritage will protect 1% of Australia by conserving more than 7 million hectares of Australia's land and waterways and the wildlife that inhabits these protected areas. Protecting Australia's biodiversity and restoring the health of the environment are our highest priorities. We also work in partnership with others to rebuild the resilience of whole landscapes, and use best available science to manage the land under our care.

Bush Heritage anchor regions

## Reserves outside the Bush Heritage anchor regions

**Edgbaston Reserve, Qld. 8074 ha.** Acquired 2008
**Bon Bon Reserve, SA. 216810 ha.** Purchased 2008
**'Nameless' Sylvan Reserve, NSW. 55 ha.** Donated 2007
**Boolcoomatta Reserve, SA. 64337 ha.** Acquired 2006
**Reedy Creek Reserve, Qld. 452 ha.** Donated 2004
**Currumbin Valley Reserve, Qld. 4 ha.** Donated 1999
**Brogo Reserve, NSW. 120 ha.** Purchased 1995
**Fan Palm Reserve, Qld. 8 ha.** Purchased 1993
**Liffey Valley reserves, Tas. 261 ha.** Acquired 1992 and 2003




**GONDWANA LINK PARTNERSHIP**

Gondwana Link is a partnership between Bush Heritage and five other environmental organisations. Together, our visionary aim is to repair some of the ecological damage inflicted by land clearing and unsustainable land management practices that have occurred particularly during the past 50 years.

## South-West Botanical Province

**Peniup Creek Reserve, WA. 2409 ha.** Purchased jointly with Greening Australia (WA) 2007
**Yarrabee Wesfarmers Reserve, WA. 923 ha.** Purchased jointly with Greening Australia (WA) 2006
**Monjebup Reserve, WA. 956 ha.** Purchase completed 2007
**Eurardy Reserve, WA. 30070 ha.** Purchased 2005
**Charles Darwin Reserve, WA. 68615 ha.** Purchased 2003
**Chereninup Creek Reserve, WA. 877 ha.** Purchased 2002
**Kojonup Reserve, WA. 389 ha.** Purchased 1996

BUSH HERITAGE
AUSTRALIA

## Gulf of Carpentaria to Lake Eyre

**Cravens Peak Reserve, Qld. 233 000 ha.** Purchased 2005
**Ethabuka Reserve, Qld. 213 300 ha.** Purchased 2004

### KAANJU NGAACHI INDIGENOUS PROTECTED AREA PARTNERSHIP

The Kaanju Homelands IPA is located approximately 700 kilometres north of Cairns and was set up by the Traditional Owners with the aim of protecting their country from weed and feral animal infestations and protecting cultural sites from desecration. Bush Heritage is working in partnership with the Kaanju people through the Chuulangun Aboriginal Corporation to put their plans into action.

## Queensland Uplands and Brigalow Belt

**Yourka Reserve, Qld. 43 500 ha.** Purchased 2007
**Goonderoo Reserve, Qld. 593 ha.** Purchased 1998
**Carnarvon Station Reserve, Qld. 59 000 ha.** Purchased 2001

## South-East Grassy Box Woodlands

**Tarcutta Hills Reserve, NSW. 432 ha.** Purchased 1999
**Burrin Burrin Reserve, NSW. 411 ha.** Donated 1999
**Scottsdale Reserve, NSW. 1328 ha.** Purchased 2006
**Nardoo Hills reserves 1, 2 & 3, incorporating Judith Eardley Reserve, Vic. 788 ha.** Purchased 2005–2007


### KOSCIUSZKO TO COAST PARTNERSHIP

This landscape restoration project aims to re-establish a network of habitats between the Australian Alps and the remnant bushland of the coastal ranges to the east.

### TASMANIAN MIDLANDS PARTNERSHIP

This partnership plans to protect the little-reserved grasslands, heathlands and dry forest of central Tasmania. Working with partners including various government organisations, a private philanthropic foundation and a growing number of landholders, we are developing a common vision and plan to manage this threatened landscape into the next century.

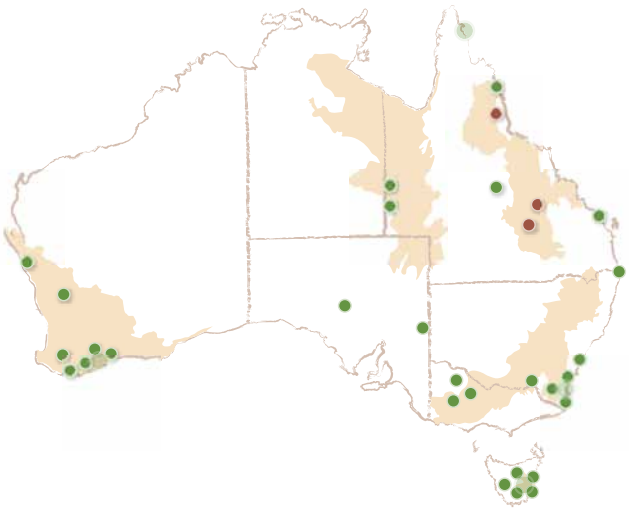
## Midlands of Tasmania

**South Esk Pine Reserve, Tas. 6.8 ha.** Purchased 1998
**Friendly Beaches Reserve, Tas. 140 ha.** Purchased 1997

# Queensland Uplands and Brigalow Belt anchor region

## Reserves in this region

Yourka Reserve ■ Carnarvon Station Reserve
■ Goonderoo Reserve



## Restoring Carnarvon Station's ecosystems

**Our work on Carnarvon Station Reserve this year has focused on restoring the bluegrass grasslands, grassy woodlands and brigalow scrub. Land clearing has compromised or removed these ecosystems in the past. Carnarvon's restoration to self-sustaining condition is a key management activity.**

### Background

Carnarvon Station sits beside the largest national park in the region. While the purchase added significantly to the varied ecosystems reserved within the park, the principal justification for the purchase of Carnarvon was to extend the area under protection to include the lowland ecosystems of the valleys. These are the most productive ecosystems in the landscape and their productivity is likely to help drive and improve the viability of fauna populations in the surrounding slopes and hills.

One of the most threatening weed problems at Carnarvon has been the spread of Johnson grass in the grasslands. Satisfyingly, the control effort and ongoing mop-up has the Johnson grass under control. We can now focus on getting the native grasses up to a self-maintaining threshold.

### Goals

Not all impacts of past land use are quickly remedied, and in some instances active intervention is needed to encourage, or continue, regeneration. Important examples from the last year include:

- preventing significant soil loss into Channin Creek due to poorly constructed dams and overgrazing
- accelerating the restoration of the endangered bluegrass grasslands and the dependent fauna
- reclaiming the productivity and fire ecology of the upland grassy woodland from the impacts of feral herbivores.

### Activities

- The construction of Trapper's Dam and the subsequent collapse of its spillway cost tonnes of soil and threatened thousands more. Woolshed Flat, due to historical grazing pressure, had similar problems. Both areas were entirely reshaped and revegetated this year.
- Some extensive areas of bluegrass have been very slow to recover, both in terms of cover and in resistance

From left: Pennywort growing in the permanent spring waters of Blue Water Spring, Carnarvon Station Reserve, Qld. PHOTO: WAYNE LAWLER/ECOPIX Giant water-holding frog (*Cyclorana novaehollandiae*) found in pitfall trap, Carnarvon Station Reserve. PHOTO: SANDY WALTERS

to invasive species. Activities have included control of invasive species by herbicide and trials looking at the effectiveness of seeding with native species.

- Fire has also been used in the grassland to disadvantage invasive weeds such as Johnson grass and to restore the natural fire regimes.
- Other work on the reserve this year has focused on control of feral animals.

### Results

Erosion control works at Trapper's Dam and Woolshed Flat were timely, preventing significant soil loss from poorly designed dams and eroding slopes despite 8 metre deep flash floods.

A major regeneration of the endangered bluegrass grasslands is under way, and in most areas the bluegrass has been returning to healthy levels. Seed harvesting has been very successful, with seed being used to regenerate the earthworks at Trapper's Dam and Woolshed Flat. It has also been used in seeding trials on the degraded cultivated areas to determine the best approach to regeneration and improving resistance to invasion. These trials will continue in the coming year.

A cooperative feral control effort with Parks and Wildlife has seen massive increases in ground cover and improved soil surface condition in the more fertile areas of the upland valleys. The higher cover will greatly increase water penetration and productivity and, importantly, restore a natural fire ecology to the upland, something that has been compromised for years in some areas.

## Battling the buffel grass at Goonderoo

**The key land management activities on Goonderoo Reserve arise from the past clearing of grassy and shrubby woodlands and acacia shrublands to convert them into pastures. Typically, pastures were seeded with exotic grasses to aid intensive grazing. These areas are now dominated by those grasses, especially buffel grass.**

### Background

Goonderoo Reserve includes two of the most endangered ecosystems in the country – brigalow scrub and bluegrass grasslands. About 15 per cent of the reserve is now dominated by grasses, especially buffel grass.

The situation on the reserve varies with the soil type. In much of the shrubby woodlands, the shrubs are returning, but soil restoration works are required to restabilise the soil surface in places. In the brigalow shrublands, the brigalow has responded well, thanks to a wet year, but the buffel has also flourished. The brigalow is fire-sensitive and the buffel presents a fire threat that could kill the regenerating trees. Eventually the shrubby woodlands and closed brigalow scrub should shade out the grasses and protect themselves from fire.

### Goals

To help the woodlands and brigalow reach this self-sustaining level, management has focused on keeping the buffel fuel load below a hazardous level while allowing the fire-sensitive shrubs to grow.

### Activities

The buffel fuel load has been controlled with strategically timed pulse-grazing: the stock of passing drovers eats the grass cover, while leaving the less palatable shrubs behind. This has been backed up with spraying the buffel and other weeds and by maintaining firebreaks.

### Results

The wet year has seen the shrubby country thicken up. It is hoped a few more decent shrub-promoting wet seasons will see these areas protecting themselves.

The brigalow shrubs and regenerating shrubby woodlands are in good health and expanding their canopy cover in many places. In others it appears that soil-surface compaction is reducing water and nutrient infiltration. This will be the target of future management and is currently under investigation.

In some areas the buffel grass has been hit with a rust-like disease, and is being replaced by self-sown native grasses. Elsewhere, though, the buffel domination continues. These areas are being maintained at low fire-risk levels with occasional pulse grazing until a regeneration strategy can be devised.

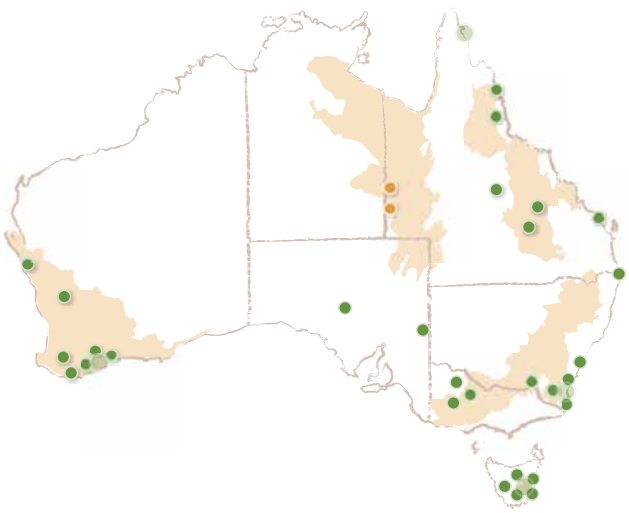
As for the grasslands, now that stock has been removed, and after an intensive spraying effort, these areas appear to be well on the road to recovery, although follow-up continues.

From left: Valley of Channin Creek and the main escarpment, eastern Carnarvon Station Reserve, Qld. PHOTO: WAYNE LAWLER/ECOPIX Buffel grass growing in brigalow shrubland at Carnarvon Station Reserve. PHOTO: MURRAY HASELER Spraying buffel grass. PHOTO: CARL RUDD

# Gulf of Carpentaria to Lake Eyre anchor region

## Reserves in this region

Cravens Peak Reserve ■ Ethabuka Reserve



## Working with Desert Channels Queensland

**Bush Heritage has developed an alliance in this region, working in partnership with Desert Channels Queensland, a regional natural resource management group.**

### Background

Bush Heritage is keen to develop partnerships which add value to the management of biodiversity, both on its reserves and at the regional scale. In the Lake Eyre Basin of Queensland, a strong partnership is developing between Bush Heritage and Desert Channels Queensland (DCQ), with the two organisations working together on both Ethabuka and Cravens Peak reserves.

Cravens Peak, one of Bush Heritage's largest reserves, was purchased in 2005 with assistance from various organisations including the Australian government's National Reserve System program and The Nature Conservancy. The reserve has been managed under an interim management statement which guides management activities in the reserve until a full reserve management plan is in place.

### Goals

Our aim was to develop a draft management plan for Cravens Peak which would outline key values of the reserve and strategies to protect them. These strategies would then guide the development of the work program for the reserve over a five-year period.

### Activities

2008 has seen the development of the Draft Cravens Peak Reserve Management Plan which has involved cooperation between Bush Heritage planning staff, led by Clair Dougherty and DCQ Regional Planner Mike Chuk, who has many years' experience in natural resource and conservation management in the Lake Eyre Basin.

### Results

Key issues for Cravens Peak have been identified as:

- the management of grazing pressure from introduced herbivores
- fire management and weed control
- the management of visitors (including fostering the existing strong research link with Professor Chris Dickman and his team from Sydney University, who have been undertaking long-term research in the area for the last 20 years)

From left: Northern Simpson Desert/Channel Country after rain, Qld. Dunefield vegetation of wild parsnip (*Trachymene glaucifolia*), *Spinifex triodia* and other ephemeral plants, Cravens Peak Reserve, Qld. PHOTOS: WAYNE LAWLER/ECOPIX

- developing sound working relationships with the managers of neighbouring cattle properties.

The reserve management planning template is currently being fine-tuned. The aim is to make the plans effective documents that can guide staff working across all the reserves, providing key information and management direction in a form that can be easily reviewed and updated.

Developing sound relationships with regional partners is a wise long-term investment that benefits both parties. The recent cooperation between Bush Heritage and DCQ has included input to the development of the fire management plan for Ethabuka and Cravens Peak reserves, mapping services, pest management advice and a recent fencing project at Ethabuka. As Mike Chuk sums up, 'It's great to see Bush Heritage benefiting from our resources and working towards common goals in the protection of our region's biodiversity'.

## Fire management planning

**Both Ethabuka and Cravens Peak reserves have been subject to wildfires dating back to pre-European times. Over the last century four fires have burnt areas in excess of 100 000 hectares. Fire management planning at both reserves has been under way for the last year.**

### Background

Wildfires pose a risk to life, infrastructure and property. From a land management perspective wildfires can destroy fences, allowing incursions of neighbouring stock. They can also increase sand movement, swamping roads and worsening the effects of dust storms which can hinder both travel and the functioning of equipment.

Fire can also have a major negative impact on fire-sensitive ecosystems and plant species, and also on populations of small animals. However, smaller patchy fires can have a rejuvenating effect on some plant communities. Often after fire there is major germination of plant species, which then flower and set seed. This provides an abundant food source for a variety of animals. Small fires create a mosaic of age-classes within vegetation that in turn provides a greater variety of habitats for animal species. The instigation of new fire regimes must be carefully planned so as not to be detrimental to the levels of diversity within the region, and to protect valuable long-unburnt vegetation.

### Goals

Fire management is a major focus of our work on the ground at Ethabuka and Cravens Peak reserves. We have now established the rationale for the management of wildfires on both reserves, and have a framework for guiding yearly operational burn plans. The main aims of this are to:

- protect human life, infrastructure and assets
- protect fire-sensitive vegetation and manage fuel loads
- prevent weed infestations and incursions of pest species
- engender community support and participation
- increase knowledge of fire behaviour
- evaluate the ecological effects of fire on biodiversity across the desert landscape.

### Activities

An on-site fire management planning workshop, involving experts from Bush Heritage, Desert Channels Queensland, Sydney University, Queensland Parks and Wildlife and the Rural Fire Brigade was held in November 2007. It was an opportunity to discuss and plan fire management for Cravens Peak and Ethabuka in the context of the region. Following on from this, Sydney University was engaged to compile the Cravens Peak/Ethabuka Fire Management Plan.

### Results

The draft fire management plans for Ethabuka and Cravens Peak reserves are now complete. The intention is to maintain and increase the existing network of firebreaks to prevent broad-scale wildfires and allow for a regime of smaller scale fires that should enhance biodiversity in the future.

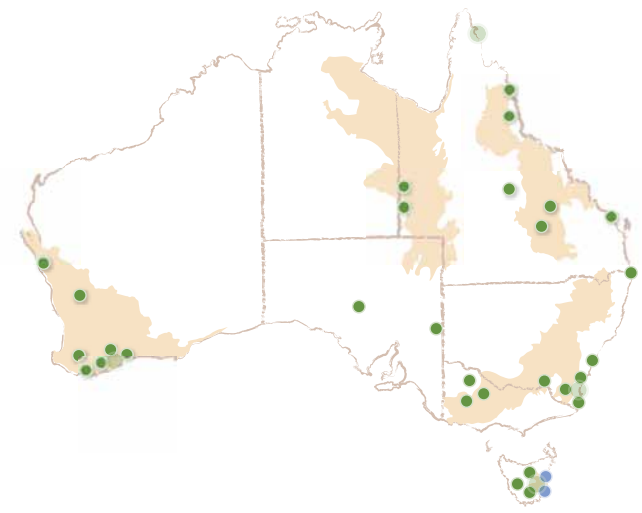
At present there is no need to carry out ecological burns on either Ethabuka or Cravens Peak reserves. Following the most recent wildfire in 2002, spinifex cover remains at manageable levels but the vegetation structure, biomass and fuel load levels will be kept under continual review as the vegetation community matures and the situation changes. We will continue to work closely with Professor Chris Dickman and his team as they monitor changes in the small mammal and reptile community in response to fire history. This information will then be fed back into our fire management planning to ensure the best possible biodiversity outcomes are achieved.

From left: Starting the controlled burn, Ethabuka Reserve, Qld. Firebreak at Ethabuka Reserve, Qld. PHOTOS: GLEN NORRIS

# Midlands of Tasmania anchor region

## Reserves in this region

South Esk Pine Reserve ■ Friendly Beaches Reserve



## Tasmanian Midlands Landscape Project

**This year has seen the completion of the conservation and business planning stages of the Tasmanian Midlands Landscape Project.**

### Background

From a conservation perspective, the Tasmanian Midlands is often overshadowed by the old-growth forests and rainforests of the south-west of the state. Both areas have many endemic species, but in the Midlands there is a high proportion of threatened species and ecological communities, such as the Tasmanian devil (*Sarcophilus harrisii*), the Tasmanian wedge-tailed eagle (*Aquila audax fleayi*), several spider orchids (*Caladenia* spp.) and the lowland native grasslands.

Over the past year Bush Heritage has been developing a comprehensive plan of action with its partners in the region – the Tasmanian Land Conservancy, the Australian government's National Reserve System program, a private philanthropic foundation, the Tasmanian Department of Primary Industries and Water and a number of key land-owners.

### Goals

The planning process aimed to:

- identify the key ecological values in the region
- identify core areas that encapsulate these values
- determine the critical threats
- develop strategies to address these threats
- produce a business plan for investment in conservation.

This planning phase is essentially complete and the implementation phase is now under way. A Midlands farmer, Andrew Cameron, has been appointed as the Midlands project coordinator to oversee this important next phase. Andrew is a sheep grazier and has also been involved in several conservation programs on private land.

### Activities

The key conservation assets in the region are:

- lowland native grasslands, particularly grasslands dominated by kangaroo grass (*Themeda triandra*) and silver tussock (*Poa labillardierei*)
- marsupials at risk of extinction from ongoing land clearing and the introduction of the European red fox (*Vulpes vulpes*)

From left: Lochiel Wetland, Tasmanian Midlands. PHOTO: DANIEL SPROD
Wedge-tailed eagle. PHOTO: BILL BROWN

- the wedge-tailed eagle, the largest predator in the area
- grassy woodlands, which are endangered as a result of being used as bush runs by graziers
- dry heathy forests, particularly those dominated by black and silver peppermint (*Eucalyptus amygdalina* and *E. tenuiramis*, respectively)
- lowland alluvial systems, including the Macquarie, South Esk and Jordan rivers
- upland riparian systems, from marshy soaks to rapid streams
- valley floor wetlands, including many small ephemeral pools.

Scientists from Bush Heritage, the state government and the Tasmanian Land Conservancy then helped to construct and shape 'focal landscapes' – areas that capture the most viable and best examples of the key assets – using spatial analysis tools. These focal landscapes will be used to direct conservation investment in the region. Two of the fourteen focal landscapes identified have been selected for the first stage of the implementation phase of the Midlands Landscape Project.

The Conservation Action Planning (CAP) tool developed by The Nature Conservancy was used to help produce targets and strategic actions aimed at addressing the key threats to these assets.

Many of the strategic actions identified revolve around the need to form partnerships with local land-owners and to establish an endowment that will help fund these partnerships into the future. The majority of the key assets are on private land that has been owned and managed by the same family for generations. Bush Heritage also aims to acquire its own property or properties in the Midlands, work on which will be guided by the target assets and focal landscapes developed in the plan. A private philanthropic foundation has made a generous donation to help start these partnerships and to aid the purchase of land by Bush Heritage.

## Results

Any land that Bush Heritage purchases or works on in partnership with its owners will undergo ecological outcomes monitoring. This program aims to identify and measure a set of independent variables which provide reliable information about the status of ecosystem health. The CAP process helped to identify the overall current state of the conservation assets in the Midlands, and indicators were selected (for example, a diversity index for plant species) that will allow us to monitor the health of these assets. It is envisaged that some monitoring on partnership properties will be done partially by the land-owner, which will help them to assess whether their current management practices are on track. Management advice and assistance for land-owners, as well as regular detailed monitoring, will also be carried out by Bush Heritage's regional ecologist.

## Protecting the Tasmanian devil

Prior to the outbreak of the Devil Facial Tumour Disease (DFTD), the Tasmanian devil population in the Midlands was probably at it highest levels since European settlement. Their food source was plentiful and they had few competitors or threats. The disease has decimated the population in the Midlands and the rest of eastern Tasmania, where some local populations have crashed by 95 per cent. One probable consequence of this crash is the recent large increase in feral cat numbers, and it seems that the red fox may also be gaining a foothold. The Midlands Landscape Project will help complement the Tasmanian government's DFTD research and fox control taskforce by seeking to protect suitable habitat for the Tasmanian devil and controlling feral animal populations on Bush Heritage and partnership properties.

From left: *Mazus pumillo*, a native herb. PHOTO: MATT APPLEBY Wetmore Springs. PHOTO: DANIEL SPROD Fleshy greenhood (*Pterostylis wapstreorum*). PHOTO: MATT APPLEBY

# Conservation on Country – Indigenous partnerships

**Bush Heritage's Conservation on Country program has been actively working with Indigenous people in partnership since 2005. Our Indigenous partnerships are now providing significant contributions towards Bush Heritage's conservation goals. Working with our Indigenous partners we are learning about management of country together, through applying traditional knowledge practices and Western scientific management. Here we showcase several of our Indigenous partnerships.**

## Kaanju Ngaachi Indigenous Protected Area, central Cape York, Queensland

In central Cape York, Bush Heritage has supported Kaanju Traditional Owners in establishing and managing the Kaanju Ngaachi Indigenous Protected Area (IPA), located approximately 700 kilometres north of Cairns. On 4 June 2008, a ceremony was held in the Kaanju Ngaachi (Kaanju Homelands) to formally declare the IPA, acknowledging the ongoing efforts of the Kaanju people in looking after their country. The IPA covers 197 500 hectares and is centred on the Wenlock and Pascoe rivers. The area provides protection for a number of rare and endangered fauna species, including the north-eastern tree kangaroo, the cassowary (*kutani*) and the palm cockatoo (*kila*).

Through the partnership, Kaanju people are employed and trained to survey, manage and monitor weeds such as olive hymenachne, which is removed from sensitive lagoon systems. They also carry out fire management, conduct patrols to limit prohibited tourist access, and have built and maintained designated camping grounds to prevent further erosion of river areas and damage to Kaanju cultural sites.

As well as ensuring the conservation of significant habitats for threatened species, the Kaanju Homelands IPA provides meaningful local employment and training opportunities and allows the Kaanju people to retain their cultural responsibilities for looking after their country.

**For more information on the Kaanju Homelands IPA, please visit www.kaanjungaachi.com.au**

From left: Morning vista, Yourka Reserve, Qld. PHOTO: WAYNE LAWLER/ECOPIX The launch of the Kaanju Ngaachi IPA on Kaanju homelands. From left: unknown; Peter Taylor, Director, National Reserve System; unknown; David Claudie, Kaanju Traditional Owner and Chair of the Chuulangun Aboriginal Corporation, and Sarah Eccles of Bush Heritage. PHOTO: MATT APPLEBY

### Wunambal Gaambera Country, North West Kimberley region, Western Australia

In the far North Kimberley region of Western Australia we are working in partnership with the Wunambal Gaambera Aboriginal Corporation (WGAC), a representative organisation for Wunambal Gaambera Traditional Owners, through a consultative planning process that is identifying key conservation values, and actions to protect those values, in Wunambal Gaambera country.

Wanjina Wunggurr Uunguu culture has existed for 40 000 years, is unique to Wunambal Gaambera country, and can only exist in this country. Its future contribution to the diversity of Australian culture is dependent on some 500 Wunambal Gaambera people maintaining in modern ways their ancestors' natural and cultural assets, values and knowledge in Wunambal Gaambera country.

The region's conservation values have seen it recognised as one of Australia's biodiversity hotspots. It provides a home for many endemic vertebrates, including 31 reptile species, at least sixteen fish species, ten frog species, six mammal species and two bird species.

Balancing Wunambal Gaambera people's vital economic opportunities, such as gas industrialisation and tourism, with threats of uncontrolled wildfire, increasing mineral and gas extraction and increasing feral animal numbers requires essential conservation planning and a healthy country management framework. This planning and framework will build the necessary foundations for future management of Wunambal Gaambera country by its Traditional Owners.

### Traditional Knowledge Revival Pathway program (TKRP): Kuku Thypan people reinstating traditional fire management practices in Cape York, Queensland

Bush Heritage is working in partnership with Balkanu Cape York Development Corporation (Balkanu). The partnership focuses on support for the implementation of their Cape York Caring for Country strategy. The strategy aims to build increased local sustainable capacity and structures for the Cape's Traditional Owners to undertake conservation work through their local land and sea management centres. Central to the strategy is the use of traditional knowledge and practices as the foundation of this development of capacity.

One of the most significant threats to the conservation values of Cape York is uncontrolled wildfire. As part of this partnership Bush Heritage is supporting the TKRP Kuku Thypan fire management team. The TKRP team of Kuku Thypan Elders and youth are reinstating traditional fire management practices on Aboriginal land in and around Laura, including Lakefield National Park. The burning is improving the health of the country and habitats for endangered species such as the golden-shouldered parrot (*Psephotus chrysopterygius*).

### Noongar partnership in Gondwana Link, south-west Western Australia

In the Gondwana Link partnership in south-west WA, Noongar people and Bush Heritage are working together to carry out ecological and cultural assessments of the Gondwana Link reserves. These assessments have assisted Bush Heritage in developing a deeper understanding of the area's land management needs and of Noongar values, while increasing Noongar access to their country and involvement in managing the reserves.

Noongar Elder Averil Dean says: *'It is wonderful to be back out on country with our young ones and to see the difference in the self-esteem of the youth who are participating in this project.'*

The knowledge gained through these assessments, with the support of the Noongar Elders, is combined into reserve management plans. The assessments enable the Noongar people to retain and pass on their traditional knowledge, and the plans provide ongoing guidance on management and protection of cultural sites and values.

These ecological and cultural assessments have led to a Noongar Caring for Country training program in Gondwana Link. During 2008, Bush Heritage is supporting on-country training in conservation and land management for ten Noongar people across the Gondwana Link properties. This training involves activities that are assisting in the management needs of the reserves. Elders are also involved, offering cultural knowledge and education. Through this program, Noongar trainees are learning skills in contemporary land management that will provide them with a good background for future employment opportunities.

From left: Surveying at Chereninup Creek Reserve, WA. PHOTO: KEN HAYWARD Dale Musgrove doing controlled burning, part of the TKRP program. Lagoon systems in the Kaanju Homelands IPA are rich habitats for wildlife. PHOTOS: MATT APPLEBY

## Marketing – key milestones for 2007–08

**All of Bush Heritage's growth in 2007–08 has been supported and made possible by the generosity of our supporters. This was the last year of Stage 1 of our Anchors in the Landscape campaign. The Anchors campaign reached a total of $23 million, a large proportion of which was raised or pledged in this financial year, allowing us to purchase a number of key properties including Edgbaston, Bon Bon, Yourka, Peniup and Monjebup. It also helped fund and facilitate six on-ground Indigenous partnerships, in which we offer financial and staff support to the Traditional Owners. Bush Heritage is working with the Bidjara, Balkanu, Warddeken, Wunambul Gaambera and Noongar people and the North Australian Indigenous Land and Sea Management Alliance in central Queensland and across Cape York, Arnhem Land, the Kimberley, and south-western Australia.**

We took the opportunity this year to restructure our business to build capacity for the next phase of our campaign which will commence in 2008–09. Our aim was to amalgamate our Communications and Fundraising teams into an integrated Marketing unit of three teams: Fundraising & Communications Team; Supporter Services Team and Community Engagement Team, each with a key manager reporting to the Chief Marketing Officer, Pamela Sutton-Legaud.

With this restructure, as we work towards our key conservation goals, our aim is to provide our supporters with more efficient service represented by faster turnaround of receipting and response to enquiries, more information about our work on reserves and more details about how donations are making a difference. Our website will play a bigger part in our communications strategy, offering supporters a variety of up-to-date information on a more regular basis. Improved support systems mean that there will be more opportunities for volunteers to be involved with our work on the ground and in our Melbourne office.

As well as this, an increased focus on spreading our message throughout Australia means our story will be seen more often in local, regional and national media outlets – such as the story on the ABC's *7:30 Report* this year celebrating the purchase of Yourka, made possible through the generosity of Ian Landon-Smith and many other fantastic donors.

We are also indebted to a number of our supporters who chose to recognise Bush Heritage in their wills in the last year. This support is all the more gratifying for what it represents: a genuine long-term commitment to both Bush Heritage and the future needs of the Australian landscape and its inhabitants. To all who donate to us, thank you for your respect and support.

As we near our 1 million hectare milestone, it is not exaggerating to say that the Bush Heritage marketing team recognises that it is part of a joint effort to make Australian conservation history – by helping as many Australians as possible to learn about what can be done when we all work together towards protecting Australia's natural inheritance.

Wallaroo in Bendee open woodland below Alice Tableland, Aramac Range, Edgbaston Reserve, Qld. PHOTO: WAYNE LAWLER/ECOPIX

# Thank you

## Leading benefactors

Allens Arthur Robinson; Australian Government, Department of Environment & Heritage; Ian and Nan Landon-Smith; The Myer Foundation; The Nature Conservancy; South Australian Government, Department of Environment & Conservation; The Thomas Foundation; Wesfarmers Ltd

## Key partners

S C Carlton; Craig & Cora Carter; Phil & Carolyn Emms; Flight Centre; Geoff Giles; Chris & Gina Grubb; Hutchinson Foundation; Macquarie Group Foundation; The Miller Foundation; David Rickards, in memory of Helen Rickards; Graham Turner

## Major partners

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## Supporting partners

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## Bequests

Bush Heritage gratefully received bequests from the Estates of the following supporters: Thea Melvie Exley; Lindsey Frederick Hunt; Claire Annette Maher; Sylvia Gertrude Simpson-Lyttle; Stanley Charles Stokes

**Bush Heritage especially wishes to thank The Thomas Foundation and The Nature Conservancy for their crucially important support of our expanding partnership activities, including our Conservation on Country program with several Indigenous partners across northern Australia, and our participation in Gondwana Link.**

The Nature Conservancy's Conservation Action Planning method, adapted to Australian conditions, is invaluable in planning the conservation goals and strategies for both our partnerships and our reserves. The Nature Conservancy and The Thomas Foundation between them made large contributions and commitments to help us to acquire or set up Peniup, Yourka, Bon Bon and Edgbaston reserves, and have funded important conservation work on a number of existing reserves in northern Australia and South-West WA.

Again this year, Bush Heritage has benefited in particular from the matching of others' donations as part of the David Thomas Challenge, which has encouraged new donors to begin giving and established donors to new levels of generosity.

## Bush Heritage people

We thank our volunteers and temporary staff for their wonderful contribution over the year. We recognise the contribution made by staff and contractors who have worked with us over the course of the year, including:

**Doug Humann** Chief Executive Officer

**Ange Karabatsas, Christine Austin*** Executive Assistant

## Conservation

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**Jen Grindrod** Conservation Projects Officer

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**Ian Watson*** Pastoral Programs Coordinator
**Sarah Eccles** Indigenous Programs Team Leader
**Don Bell** Indigenous Programs Officer
**Lyndall McLean** Indigenous Programs Officer
**Ken Hayward*** Indigenous Programs Officer
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**Sandy Gilmore** Ecologist
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**Glen Norris** Operations Officer
**Geoff Nevard** Safety Manager
**Chantal Fowler** Planning & Operations Supervisor
**Clair Dougherty** Property Planning Coordinator
**Mel Shepperd*** Project Officer
**Steve Heggie** Regional Operations Manager Queensland & Northern Territory
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**Sajidah Abdullah & Scott Morrison*** Reserve managers, Ethabuka Reserve
**Len & Jo Rule*** Reserve managers, Cravens Peak Reserve
**Darren Larcombe** Reserve Manager, Carnarvon Station Reserve
**Richard Mailman** Indigenous Trainee, Carnarvon Station Reserve
**Thornton Kerr*** Reserve Manager, Goonderoo Reserve
**Matt Warnock** Reserve Manager, Eurardy Reserve
**Dr Siggy Heise-Pavlov*** Reserve Manager, Fan Palm Reserve
**Owen Whitaker*** Reserve Manager, South-East New South Wales
**Dr David Baker-Gabb*** Reserve Manager, Victoria
**Paul & Leanne Hales** Reserve managers, Yourka Reserve
**Kurt & Andrea Tschirner** Reserve managers, Charles Darwin Reserve
**Mal Graham*** Reserve Manager, South-West Western Australia


From left: Brushtail possum, Scottsdale Reserve, NSW. PHOTO: JIRI LOCHMAN/LOCHMAN TRANSPARENCIES Controlled burning at Reedy Creek Reserve, Qld. PHOTO: BUSH HERITAGE

 

**Peter & Emma Ashton, Paul & Bec O'Leary*** Reserve managers, Boolcoomatta Reserve

**Paul & Carolle Spencer*** Caretakers, Bon Bon Reserve

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**Mandy Sharp** Personal Assistant/Supporter Services Assistant

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**Lea-Anne Bradley** Philanthropy Executive

**Paul Evans** Philanthropy Executive

**Mavis Rennie*** Marketing Manager

**Patricia Hearns, Hazel Westbury*, Andrew Helm*** Campaign Coordinator

**Jodie Fraser** Campaign Officer

**Barbra Joffe*** Campaign Officer

**Merrilyn Julian** Bequest Team Leader

**Anne Peedom** Bequest Officer

**Liz Balogh** Bequest Officer

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**Kate Jennings** Supporter Services Officer

**Roger de Zylva, Yee Huynh*** Supporter Services Officer

**Alana Bellenger, Freda Lisgaras*** Receptionist/Supporter Services Officer

**Hannah McCarthy** Receptionist

**Katrina Blake** Conservation Partnerships Team Leader

**Heidi Fisher** Volunteer Recruitment & Training Officer

**Belinda Coutts** Visitation Officer

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**Ivars Draguns** Direct Marketing Team Leader

**Ira Sivasubramaniam, Ellie Bock*** Direct Marketing Officer/Analyst

**Alexandra de Blas*** Communications Team Leader

**Peter Houghton** Web Producer

**Dr Joelle Gergis*** Web Content Officer

**Stephanie Lavau*** Communications Officer

**Felicity Humann*, Markus Draguns*** Image Library Data Entry Officer

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### People & Organisational Development

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**Fiona Hann*** Special Projects

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**Nihal Gunawardena, Lucky Hewagama*** Finance Manager

**Rahul Gupta** Assistant Accountant

**Geraldine Ellis, Gopi Jeyakody*** Accounts Officer

* Denotes project-based staff, ex-staff members and contractors.

Controlling wheel cactus at Nardoo Hills Reserve, Vic. PHOTO: DAVID BAKER-GABB Clearing weeds, Charles Darwin Reserve, WA. PHOTO: BUSH HERITAGE

Above: Freshly fallen red gum flowers in riparian forest floor litter, Sunday Creek, Yourka Reserve, Qld. PHOTO: WAYNE LAWLER/ECOPIX
**Back cover:** Fig *Ficus* sp. growing from a shattered tor on a granite outcrop on the floodplain of the Herbert River, Yourka Reserve, Qld.
PHOTO: WAYNE LAWLER/ECOPIX

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