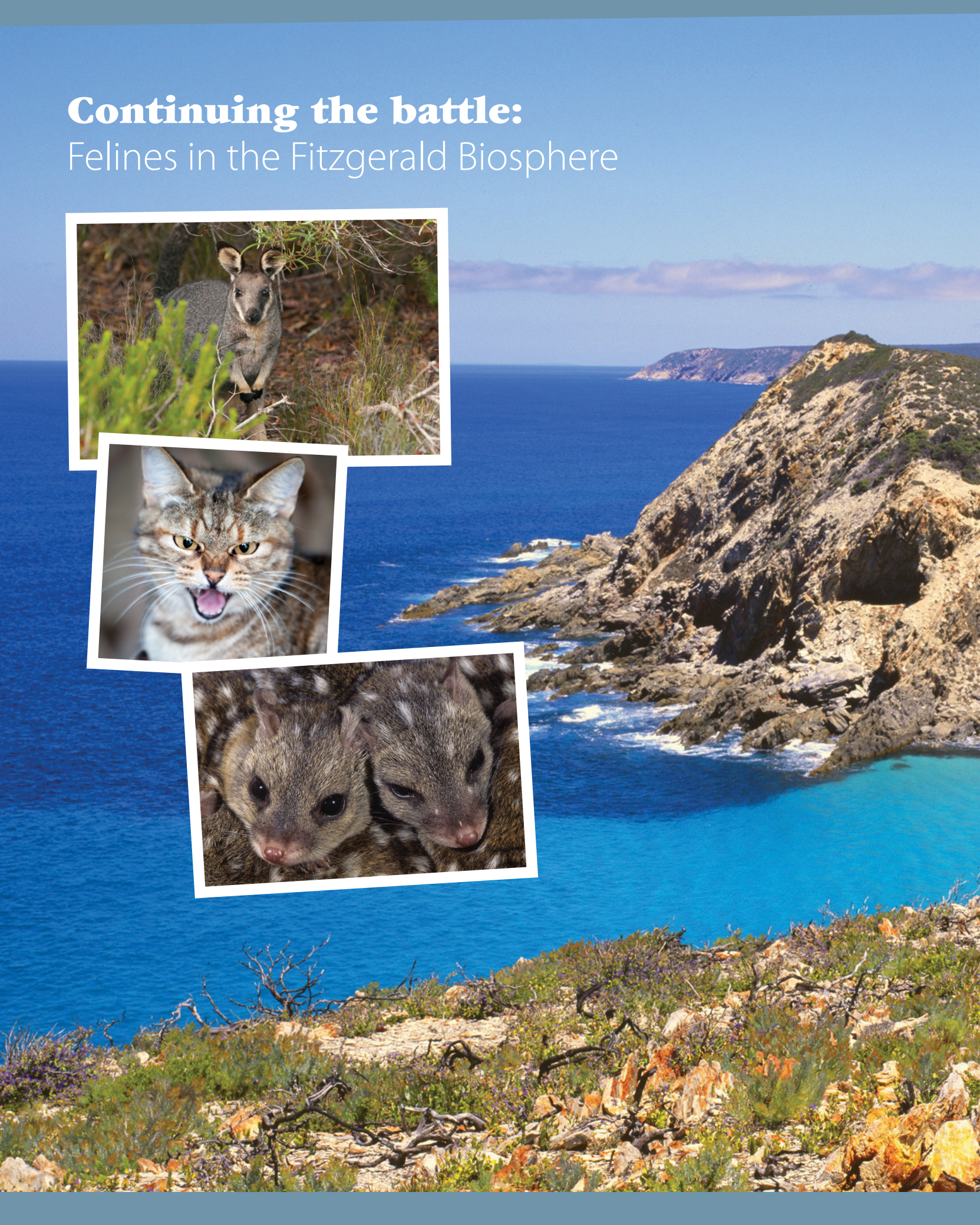
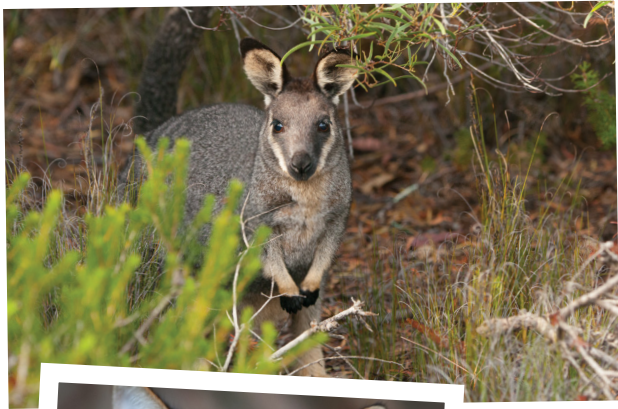


# Continuing the battle:

## Felines in the Fitzgerald Biosphere





Feral cats have been identified as one of the top priorities in the Australian Government's Threatened Species Strategy. Integration of *Eradicat*<sup>®</sup> baiting into the *Western Shield* program in conservation reserves on the south coast has been a focus for DBCA and its predecessors since 2010. And future work will engage partners across conservation landscapes to achieve the vision of addressing the threat of feral cats to biodiversity conservation.

by Sarah Comer, Dave Algar, Angela Sanders, Simon Smale, Peter Speldewinde and Karl Hansom





In recent years, visitors to Fitzgerald River National Park on Western Australia's south coast have seen significant upgrades to facilities and roads. Not quite as apparent are the results of more than five years of feral cat control, which has been carried out to improve the conservation of a remarkable array of native birds, mammals and reptiles that occur there.

Fitzgerald River National Park lies in the heart of the Fitzgerald Biosphere – a 1.5 million-hectare world-recognised UNESCO biosphere reserve that encompasses wild and diverse ecosystems, agricultural communities, and that has a rich Nyoongar and European history. The 297,000-hectare national park, which is the core area of the biosphere, is well known for its remarkable flora diversity, with more than 1,700 species of plants known to occur there. Some 2,500 taxa are found in the wider biosphere, with 100 of these found nowhere else in the world.

While the floristic diversity of the biosphere is outstanding, the vertebrate fauna is also significant. In fact, the Fitzgerald Biosphere contains one of the most intact native animal assemblages in Australia and the national park is home to more species of vertebrates than any other conservation reserve in the south-west of WA. Some 29 mammals, 51 reptiles and 209 bird species are found in the national park and a significant number of these, including nine species of mammal and more than 200 species of birds, are listed as threatened or priority species. Local landowners work in cooperation with the department to manage this precious area, which receives ongoing monitoring as well as some visitors using the area for recreation purposes.

### WESTERN SHIELD

Since 1997, the department's *Western Shield* program has worked to control foxes (*Vulpes vulpes*) through baiting in Fitzgerald River National Park, and the nearby Corackerup and proposed Peniup nature reserves. Before 2010, there was no feral cat (*Felis catus*) control in the area but, in 2010, feral cat control using



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**Main** Quoin Head, Fitzgerald River National Park.

Photo – Tourism WA

**Inset top** Black-gloved wallaby.

Photo – Jiri Lochman

**Inset middle** Feral cats are being targeted in the area.

Photo – Sallyanne Cousans

**Inset below** Chuditch.

Photo – Jiri Lochman

**Above** Aerial view of the Gondwanalink landscape with Stirling Range National Park on the horizon.

Photo – Sarah Comer/DBCA

*Eradicat*® was started in Fitzgerald River National Park, in the eastern part of the biosphere. This work was conducted as part of a research trial by the Integrated Fauna Recovery Project team to test the effectiveness of baiting in southern ecosystems, and has included monitoring of threatened and common fauna species in the park. The results of this work are encouraging with up to 50 per cent of feral cats taking baits, and increasing numbers of chuditch (*Dasyurus geoffroyi*) observed in the park in the past six years. Dibblers (*Parantechinus apicalis*) started to appear at the native fauna monitoring site in October 2014 four years after baiting began and, anecdotally, numbers of ground-dwelling birds like malleefowl (*Leipoa ocellata*) and southern scrub-robin (*Drymodes brunneopygia*) also appear to have benefited from feral cat control.

## RESTORING CONNECTIONS – THE GONDWANA LINK VISION

Fitzgerald River National Park and the native vegetation that surrounds it form an integral part of the Gondwana Link connectivity conservation effort. The Gondwana Link vision is focussed on reconnecting remnant vegetation, maintaining and restoring ecosystem function and biodiversity across south-western Australia, across karri forest, woodlands and the Nullarbor Plain. In the biosphere transition zone to the west of the park, the vision of Gondwana Link – ‘reconnected, healthy and resilient country across south-western Australia’ – is being implemented by Bush Heritage Australia, Greening Australia,

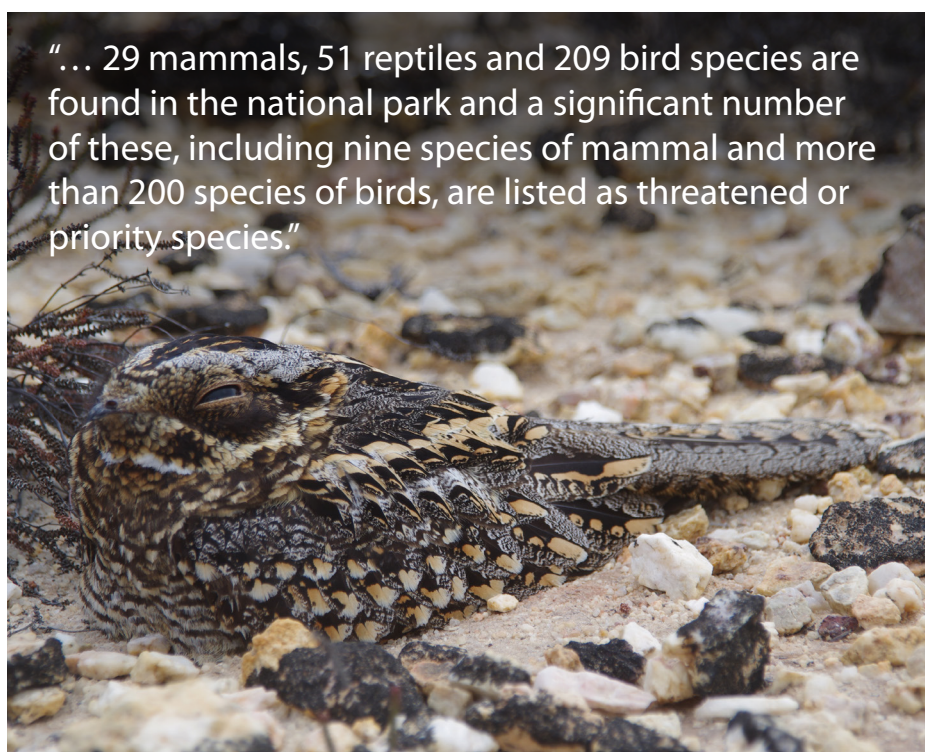




**Above right** DBCA regional ecologist Sarah Comer collects data from a feral cat.  
 Photo – Mark Comer/DBCA



**Right** Spotted nightjar – a ground nesting bird that occurs in Fitzgerald River National Park.  
 Photo – Sarah Comer/DBCA



“... 29 mammals, 51 reptiles and 209 bird species are found in the national park and a significant number of these, including nine species of mammal and more than 200 species of birds, are listed as threatened or priority species.”

the Fitzgerald Biosphere Group and local farmers and landholders. Restoration and protection of bush reserves surrounding Corackerup in the vicinity of Corackerup Nature Reserve and the Peniup proposed nature reserve has seen replanting and restoration of fauna habitat across some 4,000 hectares. In the longer term, it is hoped that improved connectivity between the Fitzgerald River and Stirling Range national parks will enhance fauna movement and habitat between these important reserves.

## THE GONDWANA LINK PLAN

A conservation action plan was first developed for this section of Gondwana Link in 2004. The plan is updated and amended to accommodate for changing factors, and is now up to its third iteration, which sets out the objectives and targets to measure conservation efforts. DBCA supports the plan and the efforts of the community and non-government organisations.

Bush Heritage identified introduced predators as a very high threat to tamar wallabies (*Notamacropus eugenii*) and western brush wallabies (*N. irma*), which are targeted by the conservation action plan. Monitoring for wallabies has been carried out since 2007 to provide baseline data that informs an introduced predator control program. Surveying and monitoring has revealed their preferred habitat and identified

the most effective monitoring methods for each species. Other species known to occur in the Gondwana Link habitat include malleefowl, southern scrub-robin, chuditch and a translocated population of duffers in the Peniup proposed nature reserve (see also ‘Island home: a new start for duffers’ on page 39). Effective introduced predator control will undoubtedly benefit these species as it has in Fitzgerald River National Park.





Above A pilot program was carried out at Corackerup Nature Reserve.  
 Photo – Sarah Comer/DBCA

## BIOSPHERE RECOVERY PLAN

The Gondwana Link partners are now building on their previous work and incorporating some of the learnings of the Integrated Fauna Recovery Project in Fitzgerald River National Park into the management of landscapes in the Gondwana Link pathway. By leveraging the enthusiasm for introduced predator control shown through the *Red Card for Foxes* program, and exploring how integrated feral cat and fox control can be extended into fragmented landscapes, it is hoped that the vision of Gondwana Link can be realised to protect native fauna from introduced predators.

A small, short-term pilot introduced predator control program was carried out by Bush Heritage on some of the restoration properties that lie to the north of Corackerup Nature Reserve in 2012 and 2013. The program identified several major obstacles to integrated control, including timing and coordination of control efforts, and difficulties in locating

### *Biosphere reserves*

The Fitzgerald River Biosphere Reserve is one of a number of global biosphere reserves established under the UNESCO (United Nations Environmental, Scientific and Cultural Organisation) MAB (Man and the Biosphere Program). The objectives of biosphere reserves are to address a sustainable balance between the goals of conserving biological diversity, promoting economic development and maintaining cultural values. Special attention is given to ‘buffer zones’ which surround the relatively untouched core area. Surrounding the biosphere buffer zones, which are recognised as having an important connectivity function in the larger landscape context, is the transition zone, where sustainable agriculture and other land uses and practices are developed and promoted by the community. Both buffers and transition roles build on the protection and conservation values in the biosphere.

and trapping feral cats. The availability of better information from feral cat control research, the registration of *Eradicat*® feral cat bait for use in WA and the federal Department of the Environment and Energy’s national *Threat Abatement Plan for Predation by Feral Cats* of 2015 supporting a major push against feral cats, contribute to the timing being right to undertake a larger project in the area.

The South Coast Integrated Fauna Recovery Project has been trialling landscape-scale delivery of *Eradicat*® in the core of the biosphere since 2010 (see ‘Controlling cats – the work continues’,

*LANDSCOPE*, Autumn 2013). Monitoring the success of this program in Fitzgerald River National Park, by examining feral cats’ use of space and response to baiting, has given the team insights that will help inform a program in the rest of the biosphere. This will include timing of delivery and supporting control methods that specifically target feral cats in areas where broadscale baiting is not possible.

Understanding how feral cats use space and resources in fragmented landscapes is also essential to the design of targeted control programs. In the Gondwana Link reserves, this work is





**Above left** Malleefowl.  
Photo – Jiri Lochman

**Left** Tammar wallabies photographed at night.  
Photo – Bush Heritage

**Above** BHA ecologist Angela Sanders and DBCA regional ecologist Sarah Comer downloading data from a collar fitted to a feral cat.  
Photo – Sarah Comer/DBCA



The University of Western Australia and the then Department of Parks and Wildlife met in Ongerup to discuss the development of an integrated control program. It is hoped this program will build on the successes of the Integrated Fauna Recovery Project work in the Fitzgerald River National Park throughout the Gondwana Link fragmented zone. In particular, the idea was to support the efforts of local farmers and NRM to control introduced predators and complement the *Western Shield* baiting programs in Corackerup and the proposed Peniup nature reserves. The support of The University of Western Australia is twofold, through conducting the additional research required to understand feral cat behaviour in the Gondwana Link fragmented zone, and to provide a mechanism to monitor the effectiveness of an introduced predator control program.

On Christmas Island, work carried out since 2010 by DBCA and its predecessors has demonstrated that collaborating with the local community can enhance the impact of control efforts on feral and stray cats. Consultation with the people on the island enabled the development of a program to de-sex, microchip and register all domestic cats, which was followed up with the removal of stray and feral cats. The enthusiasm with which the community embraced the program indicates there will be continued support which will contribute to its ongoing success.

being supported by Sarah Comer's PhD research project through The University of Western Australia. Sarah's research is building on the outcomes of the Integrated Fauna Recovery Project and is looking at how feral cats use their habitat in the larger reserves and how feral cat predation impacts native species such as tammar and brush wallabies. It does this through monitoring the movements of radio-collared feral cats in the heart of the Gondwana Link reserves. Interestingly, the data retrieved so far suggest that feral cats may move through a fragmented landscape differently to animals in intact reserves like Fitzgerald River National Park. These insights may be useful in designing a targeted control effort. The study of the diets of feral cats, which involves stomach content analysis, is showing a much greater diversity in prey species for cats in the larger reserves than in smaller remnants. It seems that although

there is some reliance on introduced mice (*Mus musculus*) and rabbits (*Oryctolagus cuniculus*), the Gondwana Link cats appear to be highly dependent on native fauna, which includes ground-dwelling vertebrates like small skinks and snakes as well as birds and mammals.

The concept of 'smart' baiting – baiting that targets specific areas frequently used by cats in fragmented areas – is being investigated to build on the Integrated Fauna Recovery Project work in the bigger reserves. Looking at the movements of cats in the Gondwana Link reserves will help to identify refuges and places where strategic control can intercept or align with these refuges.

## WORKING TOGETHER

In November 2015, a group made up of community members and staff from Bush Heritage, South Coast Natural Resource Management (NRM) group,





**Top** An integrated approach – across private and government landholders – is crucial to the success of the programs.

*Photo – Sarah Comer/DBCA*

**Above** The southern scrub-robin occurs in the Gondwana Link.

*Photo – Jon Pridham/DBCA*

## THE FUTURE

In 2015, the Commonwealth Government established a National Feral Cat Taskforce under the guidance of Threatened Species Commissioner Gregory Andrews to lead a national approach to feral cat control. This initiative brings together government and other stakeholders in the fight against the threats posed to native fauna by feral cat predation.

Back in WA, the working group has agreed to collaborate to develop an integrated introduced predator management program to trial in the Gondwana Link fragmented zone on a cluster of the conservation reserves and

adjacent farmland. The aim is to involve local government, non-government organisations, universities and NRM bodies in this work. This pilot program will aim to address and enhance the control of cats and foxes, and help to achieve the fauna conservation goals of the Gondwana Link fragmented zone conservation action plan and Fitzgerald Biosphere Recovery Plan. It is hoped this will meet the challenges of managing foxes and cats in this important conservation landscape, identify opportunities to tackle the threat posed by invasive species over the broader landscape and provide a strategic corridor for reconnecting the Fitzgerald River and Stirling Range national parks.

**Sarah Comer** is the regional ecologist for DBCA's South Coast Region. Sarah has been involved in the introduction of feral cat control programs into south coast reserves and works on a number of threatened species recovery programs. Sarah can be contacted on (08) 9842 4513 or by email ([sarah.comer@dbca.wa.gov.au](mailto:sarah.comer@dbca.wa.gov.au)).

**Angela Sanders** is the ecologist for Bush Heritages' Gondwana Link and Kojonup Properties. Angela has worked on the South Coast within the Fitzgerald Biosphere since 1993 and has conducted fauna and vegetation monitoring on Bush Heritage's properties there for the past 10 years.

**Simon Smale** is Bush Heritage Australia's Gondwana Link Landscape Manager, responsible for overall management of the organisation's contribution to the Gondwana Link project, including management of Bush Heritage's reserves in the area, and of partnerships with the owners of other private conservation reserves.

**Dave Algar** is a principal research scientist in Science and Conservation Division at DBCA. He has worked throughout WA conducting research on feral cat control for the past 25 years.

**Peter Speldewinde** is a lecturer at The University of Western Australia's Centre of Excellence in Natural Resource Management and is based at the Albany campus. He has worked in the field of conservation for more than 20 years and is currently developing models to refine the use of motion triggered cameras as a monitoring tool for feral cats.

**Karl Hansom** is the Biodiversity Program Leader with South Coast Natural Resource Management in Albany. Karl has worked in Landcare and NRM on the South Coast for the past nine years, and is involved in facilitating projects to protect the regions natural assets.