



wildlife matters

australian



wildlife
conservancy

DECEMBER 2006

The threatened wildlife of northern Australia

Reversing the decline



saving australia's threatened wildlife



the awc mission

The mission of Australian Wildlife Conservancy (AWC) is the effective conservation of all Australian animal species and the habitats in which they live. To achieve this mission, our actions are focused on:

- Establishing a network of sanctuaries which protect threatened wildlife and ecosystems: AWC now owns 14 sanctuaries covering 917,000 hectares (2.3 million acres).
- Implementing practical, on-ground conservation programs to protect the wildlife at our sanctuaries: these programs include feral animal control, fire management and the translocation of endangered species.
- Conducting (either alone or in collaboration with other organisations) scientific research that will help address the key threats to our native wildlife.
- Hosting visitor programs at our sanctuaries for the purpose of education and promoting awareness of the plight of Australia's wildlife.

about awc

AWC is an independent, non-profit organisation based in Perth, Western Australia. Donations to AWC are tax deductible.

During the last four years, over 90% of AWC's total expenditure has been spent on conservation programs, including land acquisition. Less than 10% has been spent on development (fundraising) and administration.

Front Cover: The Ningbing Pseudantechinus is a little-known carnivorous mammal of northern Australia. At Mornington, where the animal on the front cover was captured, the population of Ningbing Pseudantechinus has increased after the removal of cattle and the implementation of an appropriate fire management regime by AWC.

Welcome to the December 2006 edition of *Wildlife Matters*. It has been a remarkable year for Australian Wildlife Conservancy (AWC). As you will read in the following pages, our practical, on-ground programs are delivering impressive results for some of Australia's most threatened wildlife.

A highlight of the year was the announcement that AWC has been honoured with the Prime Minister's Environmentalist of the Year Award. The Environmentalist of the Year Award recognises the practical contribution being made by AWC at our properties across Australia. However, at a more strategic level, the award also recognises AWC's leadership in helping define a new model for conservation.

Under this new model, private (non-profit) organisations like AWC are set to play a greater role in the establishment and management of protected areas around Australia. AWC is, however, operationalising this model in a manner that places a high value on partnerships with the public sector. For example:

- The Australian Government, through Senator the Hon Ian Campbell and his Department, has made a significant grant of \$2.1 million to assist in the purchase of Wongalara. AWC must raise the balance of the purchase price and the on-going costs of management.
- AWC has signed a conservation agreement with the Queensland Government to protect Brooklyn in perpetuity. Queensland and AWC have also 'exchanged' Bilbies as part of our collaborative efforts to save this threatened species.

In addition to our collaboration with the public sector, a defining feature of the way we work is our emphasis on active land management. For example, during the three month period from July – September 2006:

- AWC staff conducted more than 20,000 trap nights, a remarkable level of biological survey and research effort.
- AWC's feral animal control program successfully targeted cats, foxes, camels, donkeys, horses, goats, rabbits and pigs. For example: at Newhaven, we have culled more than 200 camels during this three month period; at Mt Gibson, we laid more than 70,000 feral cat baits.

The investment in active management is paying dividends – the Greater Bilby and the Burrowing Bettong are just two examples of threatened species whose populations are now increasing at AWC sanctuaries. Ultimately, this is what it is all about – protecting and restoring our threatened wildlife. Thank you to all of our donors for your support, and I hope you can continue to help AWC play a role in turning back the tide of extinctions in Australia.

Atticus Fleming

Chief Executive

PS. Please consider making a donation to the acquisition of Wongalara. It is a stunning property that protects a range of animals and ecosystems not found on any other AWC properties.

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AWC named Environmentalist of the Year



Australian Wildlife Conservancy (AWC) has been honoured with the nation's most prestigious award for conservation – the Prime Minister's Environmentalist of the Year Award.



The award recognises AWC's outstanding contribution to the protection of Australia's threatened wildlife and ecosystems. AWC owns, and manages for conservation, more land than any other non-government conservation organisation in Australia. However, AWC does not measure its success by the number of properties or hectares. A more important statistic for AWC is the fact our sanctuaries now protect more than 55% of all Australian mammal species and more than 60% of all Australian bird species.

Another important measure of AWC's success is the fact that populations of threatened species at our sanctuaries are increasing, including species such as the Bilby, the Numbat and the Banded Hare-wallaby.

In addition to celebrating AWC's 'on-ground' achievements, the Environmentalist of the Year Award also acknowledges AWC's leadership in helping to establish a new model for conservation in Australia. In the past, responsibility for the management of protected areas has resided almost exclusively with government agencies. A new model is now emerging under which private sector (non-profit) organisations, such as AWC, are playing a greater role in the management of protected areas.

AWC received the Environmentalist of the Year Award at the annual Banksia Foundation Awards Dinner in Melbourne. It was a great night for all AWC supporters. Your support and involvement is building an organisation that makes a difference where it really counts – in the field!

AWC thanks all of its supporters. The award reflects your generous support for AWC. Thank you also to State and Federal Governments who have provided invaluable assistance.

Mornington named as one of Australia's "Top 10" new nature reserves

AWC's largest property, Mornington Wildlife Sanctuary, has been named as one of the Top 10 nature reserves of the last decade.

The award was announced in early November by World Wildlife Fund – Australia (WWF) and the Federal Minister for the Environment, Senator the Hon Ian Campbell. In addition to being named as one of Australia's "Top 10" new reserves, Mornington was identified as the 'non-government organisation reserve of the decade'. Other reserves in the "Top 10" included Booderee National Park (Jervis Bay).

Determined on the basis of independent scientific advice, the award recognises the importance of Mornington to the conservation of Australia's endangered wildlife and ecosystems. The property protects more than 312,000 hectares of the Central Kimberley bioregion, an area recognised by the Australian Government as a very high priority for conservation, and provides a critical refuge for over 200 bird species, nearly 100 species of reptiles and amphibians and an estimated 40 mammal species. This includes threatened species such as the Gouldian Finch, the Red Goshawk and the Northern Quoll.

The WWF award is wonderful recognition for Mornington and for the efforts of all AWC supporters who have helped protect such an important part of our natural heritage. More information on the award and the accompanying WWF analysis can be found at www.wwf.org.au



Wongalara

Protecting the wildlife of northern Australia



A feature of Wongalara is its pristine wetlands



Hooded Parrot

M. Morcombe

As this edition of *Wildlife Matters* goes to print, Australian Wildlife Conservancy (AWC) is striving to raise the funds required for the acquisition and management of Wongalara. When the transfer is complete, Wongalara will become AWC's 15th wildlife sanctuary. AWC will then own and manage for conservation more than 1.1 million hectares (around 2.7 million acres).

Wongalara itself is more than 191,000 hectares (472,000 acres), meaning it will become one of the nation's largest non-government nature reserves. Its location – on the edge of Arnhem Land and less than 120 kilometres from Kakadu National Park – is of great strategic significance to AWC. It helps fill a gap in our conservation estate across northern Australia (see map on page 16), protecting animals and habitats that are not found on any of AWC's other properties and, in some cases, that are not found in any government National Parks.

Rugged escarpments, pristine wild rivers and steep gorges ensure that Wongalara showcases the exciting landscape features typical of northern Australia. However, it is the intricate and complex pattern of ecosystems, with fine-scale variation and numerous "refugial" habitats, that is of greatest interest to AWC. Such diversity is important for wildlife, including many

of the mammals and birds that are in decline across northern Australia.

The exceptional conservation values of Wongalara are summarised on the following page. As indicated above, the property is home to several bird and mammal species that do not occur on any other AWC sanctuaries. These include species which are endemic to a small area of the Top End, such as the Kakadu Dunnart and the Hooded Parrot. Wongalara is therefore important because it represents perhaps the last opportunity for AWC to protect populations of these species.

The threat to Wongalara and its wildlife

There is now substantial scientific evidence indicating that northern Australia is on the verge of a biodiversity crisis. For example, small mammals, seed-eating birds and fire-sensitive plants are in serious decline. Many species have disappeared from large areas of their former range.

Feral animals, altered fire regimes and the impacts of cattle grazing are the primary reasons for the decline in wildlife populations. The need for action to address these threats is now urgent. Unless we can save places like Wongalara, and develop strategies to address the key threats,

a wave of extinctions is likely to occur in northern Australia.

Wongalara was on the open market when AWC commenced negotiations for its acquisition. Several pastoralists made offers to purchase the property. If it had been sold to pastoral interests, the property would have been developed – more roads, more fences and more cattle. There is no doubt that such a scenario would seriously damage many of the habitats on Wongalara and would lead to a significant loss of wildlife.

In the face of this threat, AWC has secured an opportunity to acquire Wongalara and protect its wildlife for future generations. However, we need your help to complete the acquisition and protect this stunning property.

Thank you to the Australian Government for its generous grant of \$2.1 million from the National Reserve System program to assist with the purchase of Wongalara.

Thank you also to all of our supporters who have already donated to the Wongalara campaign. In total, AWC has (at the time of writing this newsletter) raised more than \$3.7 million, including the grant from the Australian Government. We have made very good progress in a relatively short period of time.

However, we still need to raise another \$1.6 million to provide for the acquisition and management of Wongalara.



Lancewood forest Ecopix



Removing feral Buffalo will be a management priority Ecopix

The significance of Wongalara for conservation

The acquisition of Wongalara for conservation is important for the following reasons:

- Wongalara occurs in a Bioregion (a biologically distinct region) which has a very low percentage of land in formal Government National Parks. Wongalara therefore helps fill a critical 'gap' in the conservation estate of northern Australia.
- The property contains a suite of ecosystems (including 4 broad vegetation types) that are not protected in any National Parks.
- The property also protects an additional 4 ecosystems that are listed as threatened - monsoon rainforest patches, wetlands, sandstone communities and riverine vegetation.
- Wongalara is a 'hotspot' for the wildlife of northern Australia, being home to a large number of Australia's mammals, birds, reptiles and amphibians including:
 - over 200 bird species; and
 - an estimated 40 mammal species.
- There are several threatened species which find refuge on the property, as well as a number of listed migratory species. Threatened species are likely to include the Gouldian Finch, the Northern Quoll, the Crested Shrike-tit, the Red Goshawk and the Masked Owl.
- Wongalara is home to several endemic species, such as the Kakadu Dunnart and the Hooded Parrot, which are found only in a small area of the Top End.
- Wongalara protects over 55 kilometres of two major 'wild rivers', the Wilton and Mainoru.
- Wongalara will be the first 'private sector' acquisition for conservation in the 'Top End' (the northern part of the Northern Territory), thus pioneering an important new model for conservation.



Antilopine Wallaroo S. Murphy

How you can help save Wongalara and its wildlife

1. Make a tax deductible donation to AWC.

At an acquisition cost of \$20.70 per hectare, your donation will make a real difference.

- Your donation of \$100 will pay for the acquisition of 5 hectares (12 acres) of tropical woodlands.
- Your donation of \$300 will pay for the acquisition of 15 hectares (35 acres) of a pristine wetland.
- Your donation of \$5,000 will pay for the acquisition of over 240 hectares (600 acres) of rugged escarpment and gorge country.

If you donate \$300 or more, or make a monthly pledge of \$25 or more, AWC will send you a certificate to commemorate your donation.

2. Make a donation on behalf of a friend or family member as a Christmas gift. For gifts of \$300 or more we will send out a commemorative certificate identifying the number of hectares saved.

3. Distribute Wongalara brochures at your place of work, your business or at a dinner party! Please contact Debbie Attard Portugues on 08 9226 0340 or debbie@australianwildlife.org for more information.



Wongalara landscape

Ecopix

Mornington Wildlife Sanctuary

In search of treasures: mapping rare and threatened species on Mornington

Dr Sarah Legge, AWC's Manager of Conservation and Science for northern Australia, provides an update on AWC's remarkable program to map all of the populations of rare and threatened species across a huge area of the Kimberley.

Mornington is a vast property, stretching across 3,500 square kilometres of the rugged Central Kimberley. Managing a remote area of this size is an enormous challenge.

It requires a dedicated team of field-based staff with an intimate knowledge of the property and its habitats.

At Mornington, perhaps the most critical information for AWC is the location of habitats where rare, declining or isolated populations of species find refuge.

Obtaining this knowledge is not easy - many animals that live in the tropical savannas have experienced massive range contractions in the past few decades and now cling to survival in isolated and diminished populations.

One group of animals that has declined significantly is a group that lives only in the thin strips of lush vegetation along the edges of creeks. Across northern Australia, these 'riparian' communities have been substantially degraded in recent decades from trampling by stock and frequent widespread fires.

An increase in frequent widespread fires has also had disastrous effects away from creeks, and may be largely responsible for the decline in many of our native mammals, including the endangered Northern Quoll and the vulnerable Golden Bandicoot, as well as some of our flora, such as the northern Cypress Pine.

Many animals and plants of northern Australia now survive only in areas that provide a natural refuge from large fires.

Other animals naturally exist as isolated populations because they are restricted to habitat that occurs in discrete patches. Examples include



Refugial habitat on Mornington

the Rock Ringtail Possum and the Short-eared Rock-wallaby – both animals haunt the fissures of sheer sandstone escarpments that overlook the rivers, gorges and plains of the Kimberley landscape.

In early 2006, AWC committed itself to the daunting task of identifying where all the declining, rare and vulnerable wildlife populations are on Mornington. The sheer size of Mornington, coupled with the fact that most of the property is inaccessible by vehicle, presented a significant hurdle. However, whereas cars are a recent invention, legs have been in existence for at least one million years! By combining the evolutionary innovation of legs with the twentieth century inspiration of an R44 chopper, we hatched a plan to mount this exhaustive survey. All we needed were a few stoic assistants (with legs) and a visionary supporter. In a matter of a few weeks, these elements came together and, in late April 2006, we embarked on our mission to survey every inch of every creek on Mornington (over 600km) for riparian and rock escarpment specialists, and to rack up over 7000 trap-nights at a dozen or so of the most far-flung and fire-protected areas of the property in search of rare mammals.



Hayley, one of AWC's riparian survey team

Riparian odysseys

During each riparian survey, the chopper dropped a member of the intrepid team (kitted out with dry biscuits, peanut butter, a satellite phone and a huge grin) at the headwaters of a creek. After walking downstream for up to 4 days, we were picked up again by the chopper with a few dozen kilometres under their weary feet and a heap of valuable data in our notebooks. Along the length of these creeks, we mapped the location of all riparian and all escarpment specialists. This includes threatened species like Purple-crowned Fairy-wrens and Buff-sided Robins, as well as non-threatened species like Crimson Finches and Short-eared Rock-wallabies. We also mapped the locations of suitable habitat for each of these species. And finally, to make the



Dingo encounter during riparian survey

S. Legge

Dropping AWC staff at a refugial site

Ecopix

most out of these massive transects that we cut through the property, we censused for key indicator species (including the endangered Gouldian Finch) and made copious notes on the whereabouts of any other unusual creature (such as Sugar Gliders). We collected plant specimens for our herbarium, and recorded the locations of weeds, feral cattle and donkeys.

These walks turned into a wildlife odyssey for each of us, picking our way between the fragrant spinifex and thick creekside scrub, trying not to crush the carpet of wildflowers underfoot, clambering along escarpments cloaked in figs and reeking of Rock Ringtail latrines, and edging gingerly past bewildered bulls. We know these walks are a privilege, as many years have passed since humans last moved through this landscape.

The task is almost complete (see map). Once the odyssey is over, as well as knowing where every population of riparian and escarpment specialist is within Mornington, we will also be able to compare the distributions of threatened with non-threatened creek specialists, which will help us understand what makes some species more vulnerable than others. For example, we are already noting that Purple-crowned Fairy-wrens are often missing from patches of habitat that appear incredibly suitable for them (they relish large stands of pandanus beside deep pools). Crimson Finches love the same pandanus thickets, and we find them in a greater number of suitable habitat patches. Perhaps they are better dispersers, so whereas they can use patches that are widely spaced, the Purple-crowned Fairy-wrens can only make use of a restricted subset.

This issue is one of a raft of questions that will be tackled by a new AWC led project (beginning early next year) that aims to understand the dispersal behaviour, landscape dispersion and population genetics of species, like the Purple-crowned Fairy-wren, that live in isolated fragments.

The quest for the quoll

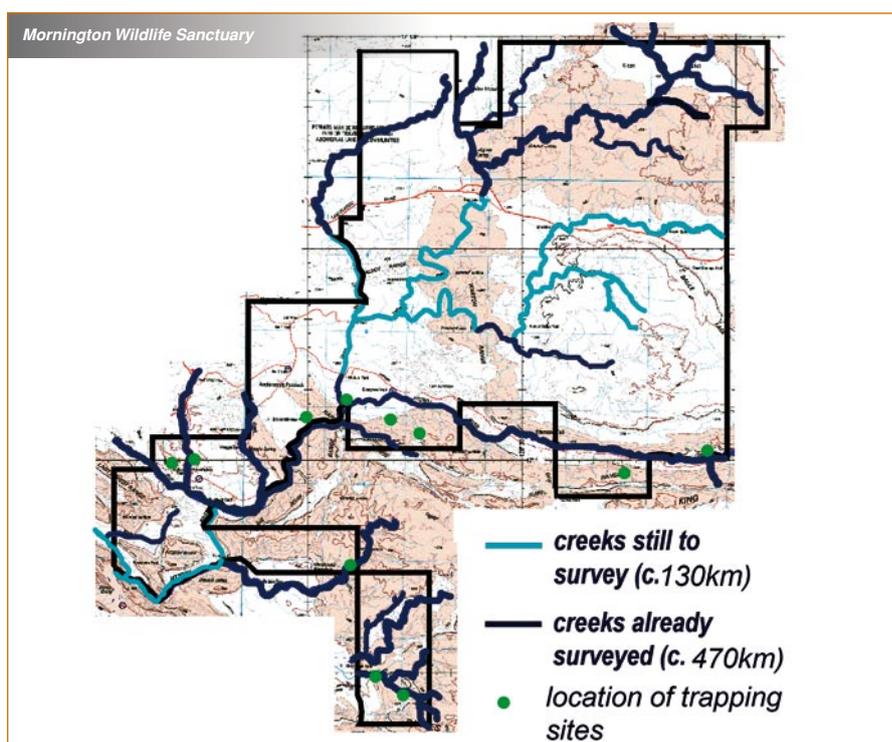
The Northern Quoll is one of the most endangered mammals of the tropical savannas and was one of the target species that we particularly wanted to locate in our search for rare species. Our first step was to identify, using archived satellite imagery, the areas of Mornington that have escaped the worst ravages of fire in previous years. It was here, in these "refugial" areas, that we hoped to find the quoll and other rare animals. Having pinpointed the refugial areas, the 'riparian reconnoiter' team transformed itself into the 'trapping troupe', with pairs of people deposited by Butch (the chopper pilot) at each site, armed once again with the same peanut butter and biscuits, sat phone and grin. This time, though, the peanut butter went into the traps as bait for small mammals, swirled through a sumptuous medley of rolled oats, honey, vanilla essence and fish sauce. The troupe stayed out for a demanding six days at a time, checking traps, spotlighting, and carrying out vegetation surveys.

But the effort was worth it: we turned up several populations of our holy grail – the endangered Northern Quoll.

This stunning and vibrant creature has disappeared from vast parts of its former range, weakened first by a change in fire patterns, and then hit again by the invasion front of cane toads. To find good numbers of quolls at Mornington highlights the vital importance of this property for the conservation of northern Australia's threatened wildlife.



Northern Quoll



Biodiversity Research at Mornington



WildlifeLink Research and Conservation Centre

For the past three years, the research and conservation program at Mornington has been housed in a 12 metre by 3 metre second-hand demountable. At times, up to 10 staff, volunteers and visiting researchers have vied for space in this tiny building. Outside these cosy quarters, people have lived in tents, using a shared kitchen and bathroom area that is regularly flooded during the wet season. It is a measure of the dedication of AWC's Mornington team and our volunteers and assistants that so much was being achieved despite the lack of adequate facilities.

However, our research and conservation facilities have now been transformed as a result of the generous support of the WildlifeLink program of the Tony and Lisette Lewis Foundation. The Tony and Lisette Lewis Foundation has funded the construction of a brand new research centre at Mornington, including new office and lab space, and accommodation facilities.

The WildlifeLink Mornington Research and Conservation Centre was officially opened by Gail Baker, the Chair of the Tony and Lisette Lewis Foundation, in July 2006. The establishment of the WildlifeLink Centre is one of the most exciting developments of the year for AWC.

As the only field research centre in the Kimberley, the WildlifeLink Centre is set to play a pivotal role in saving the wildlife of the Kimberley and northern Australia.

As well as providing much-needed office space, the new centre contains all the standard equipment used in ecological fieldwork as well as some special 'high tech' equipment. The really exciting news is that the WildlifeLink Research Centre has a genetics lab capable of carrying out fundamental techniques such as DNA extraction, PCR amplification, and electrophoresis. This means AWC can do genetic analyses onsite, without having to make lengthy and costly trips to labs in the major cities. Such technology will be an invaluable tool for many projects at Mornington – for example, to examine the conservation genetics of isolated populations of species such as the Purple-crowned Fairy-wrens.

With the WildlifeLink Centre as our new base, AWC's research program is set to expand in 2006. In addition to our existing projects addressing destocking and the effect of fire and grazing on seed-eating birds, new projects will address:

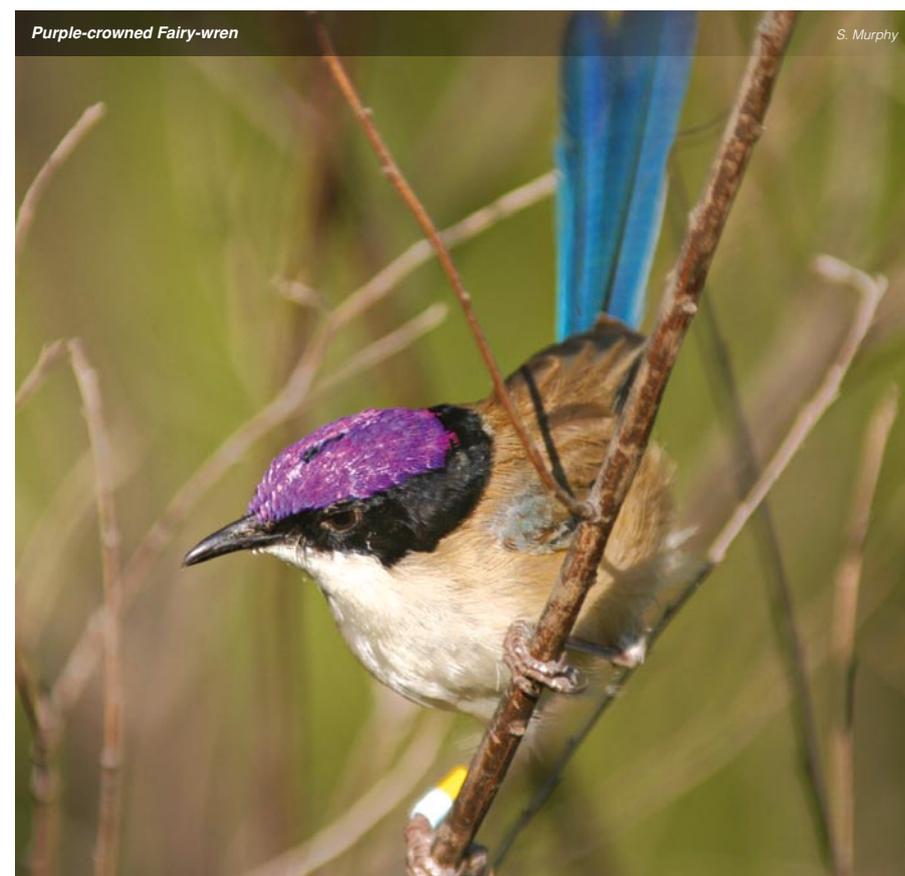
- The interaction of fire and cat predation on small mammals.

- The dispersal and long-term viability of fragmented populations.
- The effect of different burning patterns on an indicator species, the Red-backed Fairy-wren.

At least three PhD students will be based at Mornington next year to implement the AWC-led projects. In addition, there are a range of other research projects being undertaken by visiting researchers working in collaboration with AWC. These projects, some of which are summarised below, highlight the emerging role of Mornington as a centre for wildlife research in northern Australia.

The conservation of Freshwater Turtles

Dr Nancy FitzSimmons (University of Canberra) and Dr Tony Tucker (Mote Marine Laboratory, Florida) visit Mornington each year with a team of Earthwatch volunteers to study the ecology of freshwater turtles (both the Red-faced Turtle, and the Long-necked Turtle).



Wildlife Sanctuary

How does speciation occur?

Dr Mike Webster, (Washington State University), is using the Red-backed Fairy-wren to examine how natural and sexual selection promote geographic variation among populations and thus speciation. He measures what females 'choose' in males (eg. the redness of the back or the length of the tail), how this affects male morphology and behaviour, and how this process differs between Queensland and the Kimberley.

Sexual selection in the Purple-crowned Fairy-wren

A team from the Max-Planck Institute in Germany is investigating how individuals in this species choose their mates. Often, females choose males on the basis of ornaments (in the case of these wrens, bright purple feathers and a complicated song) that convey honest information about the quality of that male. The puzzle for evolutionary biologists is why these ornaments are still variable amongst males – one would expect selection to weed out 'inferior' males, leaving only individuals who all have 'high quality' ornaments.

Frog ecology

Associate Professor Michael Mahoney (University of Newcastle) and his colleague Ross Knowles collected information on the distribution and abundance of several species of frogs at Mornington, as part of Michael's work revising the classification of Australo-Papuan hylid frogs. Dr Paul Doughty (WA Museum) visited Mornington to survey the poorly-known frog fauna of the Kimberley. Paul found six species of frog that had not been recorded at Mornington before, including five that represent large range extensions.

The conservation of the Antilopine Wallaroo

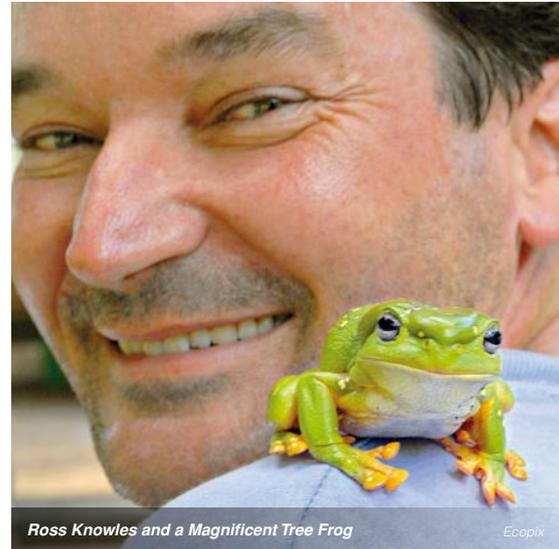
The work of PhD student Euan Ritchie (James Cook University) seeks to understand why the Antilopine Wallaroo has declined throughout northern Australia, and to suggest restorative management. In a recent survey of over a dozen Kimberley properties, Euan found that Mornington supported the highest density of this elegant macropod.

Population biogeographic history of grass finches

Rodrigo Esparza-Salas (James Cook University) is carrying out his PhD research on whether grass finches, including Gouldian Finches, show signs of population genetic structuring across tropical Australia. This sort of information is critical for reintroduction decisions and reserve design.

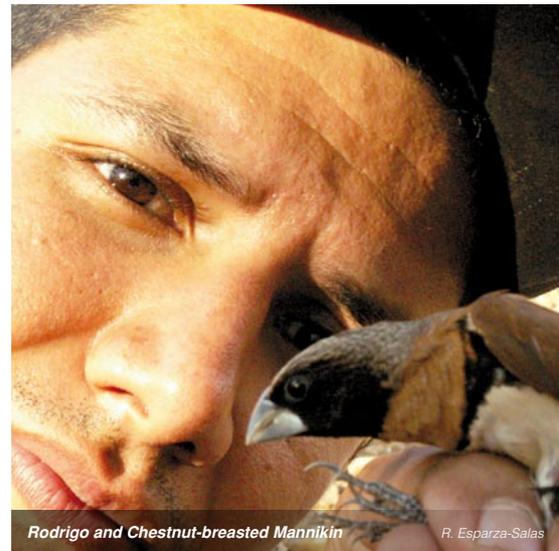
How vulnerable are Rock Ringtail Possums?

Jessica Berryman (University of Hawaii) is undertaking her PhD on the ecology and population genetics of Rock Ringtail Possums. Jessica is examining, *inter alia*, the role of fire in local extinctions of this species.



Ross Knowles and a Magnificent Tree Frog

Ecopix



Rodrigo and Chestnut-breasted Mannikin

R. Esparza-Salas



Red-faced Turtle

A. Dudley

Brooklyn Wildlife Sanctuary

New conservation agreement a model for private land in Queensland

In June 2006, Australian Wildlife Conservancy (AWC) entered into a conservation agreement with the Queensland Minister for the Environment, securing formal protection for Brooklyn under Queensland environment legislation.

The effect of the agreement is to place a covenant on the title of Brooklyn Wildlife Sanctuary, providing a statutory guarantee that the property will be managed for conservation in perpetuity.

The conservation agreement, which builds on a similar agreement in force over Mt Zero-Taravale Wildlife Sanctuary, represents a significant step in the ongoing development of a framework for private sector conservation in Australia. Brooklyn now enjoys protection under the same legislation which governs the declaration and protection of Queensland national parks. The conservation agreement therefore provides AWC donors and supporters with an assurance that their investment in Brooklyn is 'secure' because the agreement delivers additional legal and political protection for the property. Mt Zero-Taravale is currently the only other pastoral lease in Queensland which enjoys this level of protection.

The conservation agreement was signed during a special ceremony

at Brooklyn which was attended by the then Queensland Minister for the Environment, the Hon Desley Boyle, and the Parliamentary Secretary for Tourism, the Hon Bob Baldwin MP (representing the Australian Government, which provided a grant to AWC for the acquisition of Brooklyn). Other special guests included many of our neighbours, volunteers and local supporters.

The negotiation and execution of the agreement highlights AWC's leadership in the development of a secure legal framework for the long-term protection of private conservation areas, similar to the statutory protection enjoyed by government national parks. It is an important part of the emergence of private sector (non-profit) conservation in Australia.

AWC thanks the Australian Government and the Queensland Government for a grant of \$70,000 to assist in the management of Brooklyn under the Green Assist (Biodiversity Incentives Tender) program.



The rare Yellow-naped Snake captured at Brooklyn
Photo: Eric Vanderduys, CSIRO

Meanwhile, biological surveys reveal more of Brooklyn's stunning wildlife ...

An active program of biological survey and exploration is being carried out in the rainforests, woodlands and savanna habitats on Brooklyn. This program continues to uncover additional, exciting information about the property, enhancing its reputation as a property of unparalleled biological diversity.

- AWC and CSIRO have joined forces to conduct a biological survey and monitoring program at more than 50 sites across Brooklyn. An initial survey, conducted at the time the sites were established, identified a wide range of species. The highlights included the capture of a rare reptile, the Yellow-naped Snake.
- As this newsletter goes to print, the first team of Earthwatch volunteers is settling in at Brooklyn to assist CSIRO and AWC with the biological survey program at Brooklyn. If you wish to join next year's Earthwatch team at Brooklyn, visit www.earthwatch.com.au
- A botanical survey of the property is being carried out by Jeanette Kemp, an AWC volunteer and a senior employee of the Queensland Herbarium. While her survey work and analysis is not yet complete, Jeanette has identified an extraordinary 896 native vascular plants on Brooklyn. The list is sure to increase, but already we know that Brooklyn is home to more than 11% of all Queensland's vascular plant species – a stunning statistic for a single property.



Brooke Bateman, PhD student, James Cook University, setting cage traps for bettongs on the edge of the wet sclerophyll forest at Brooklyn Photo: Alex Kutt, CSIRO

... and AWC continues to deliver practical, on-ground land management

In order to protect the wildlife at Brooklyn, and the diversity of habitats that support Brooklyn's wildlife, AWC is implementing an active program of practical land management. In recent months, some of the priority actions have included:

- Carrying out prescribed burns across the property, in order to create a mosaic of burnt and unburnt areas which will help reduce the risk of extensive wildfires late in the dry season.
- The erection of additional fencing to secure Brooklyn's boundary against incursions by cattle. The fence will also prevent unauthorised access by trespassers who have, in the past, caused significant damage to areas along the Mitchell River.
- The culling of 118 wild horses. Horses cause severe damage to ecosystems on Brooklyn if not controlled.
- Weed control – a team of student volunteers successfully removed lantana and other weeds at key sites around Brooklyn.



Queensland Environment Minister Desley Boyle and The Hon Bob Baldwin at Brooklyn

J. Gearm

Buckaringa Wildlife Sanctuary

Buckaringa Wildlife Sanctuary occupies 2,000 hectares of the southern Flinders Ranges, approximately 30 kilometres north of Quorn. Dominated by two spectacular gorges – Buckaringa Gorge and Middle Gorge – the property is home to several populations of the nationally threatened Yellow-footed Rock-wallaby.

The Yellow-footed Rock-wallaby has declined across its range because of the impact of introduced predators, such as the fox, and the effect of exotic herbivores, including feral goats. At Buckaringa, AWC is implementing a range of actions to help provide a more secure future for this beautiful animal:

- Habitat restoration: A major land restoration project has been undertaken, with the removal of artificial dam walls constructed by the previous owner across the creeks running into Middle and Buckaringa Gorges. The natural flow of water into the gorges will now be restored, ensuring that permanent springs and semi-permanent waterholes remain a feature of the gorges. The plants associated with these springs and waterholes provide important resources for the Yellow-footed Rock-wallaby population.
- Feral animal control: AWC is implementing practical measures to reduce the impact of feral goats, as well as predators such as foxes. A culling and baiting program has resulted in the removal of many foxes in recent months, and the eradication of more than 950 goats. Work has commenced on the establishment of a 23 kilometre goat-resistant fence, with an initial 2 kilometres constructed by volunteers.

AWC is also set to commence a significant research project designed to enhance understanding of the ecology of the Yellow-footed Rock-wallaby and the processes that threaten its survival.



Yellow-footed Rock-wallaby

The outcomes of such research will help inform management action to ensure the growth and long-term viability of Rock-wallaby populations at Buckaringa and elsewhere throughout its range.

AWC's research will focus on the following issues:

1. Defining the size, composition and location of all rock-wallaby colonies on Buckaringa.
2. Identifying the factors determining colony size and composition.
3. Determining the current population trends and their cause.

Implementation of the research project will require a practical and innovative approach by AWC: a new cage trap suitable for the Yellow-footed Rock-wallaby will need to be designed and built; a new radio-collar, incorporating a GPS data logger, will be used for the first time on a rock-wallaby species; and extensive genetic material will be collected and analysed (to determine the extent of relatedness within and between colonies).

Thank you to the volunteer rangers who have generously invested their time and effort in helping to implement our work program at Buckaringa.

Newhaven Wildlife Sanctuary



In June 2006, the title to Newhaven was formally transferred from Birds Australia to Australian Wildlife Conservancy (AWC). Birds Australia will continue to work with AWC at Newhaven, especially in relation to the design and implementation of bird conservation measures. However, responsibility for the day to day management of Newhaven now rests with AWC.

While the habitats on Newhaven are generally in good condition, there are significant, on going land management issues that must be addressed, including fire management and feral animal control. Over time, AWC's aim is to deliver, through active management, a measurable improvement in the health of the landscape and its habitats and the populations of rare species such as the Bilby.

Establishing biodiversity monitoring sites

Newhaven occupies over 2,620 square kilometres (262,000 hectares) of central Australia, making it the second largest non-government reserve in Australia. Within its boundaries,

Newhaven contains an impressive range of habitat types.

A critical element of AWC's approach to the stewardship of a property like Newhaven is to measure the effectiveness of our management over time. We aim to do this by monitoring, at periodic intervals, relevant measures such as the population of indicator species and various attributes of key habitats.

At Newhaven, we have commenced this process by establishing 57 monitoring sites across the property. The monitoring sites have been located in a way that seeks to capture a sample of all habitat types within Newhaven, taking into account the complex fire history of the property.

At each monitoring site, AWC will undertake pitfall trapping (for catching reptiles and mammals), bird survey transects and Elliott and cage trapping for small and medium sized mammals. A vegetation quadrat will be established to characterise the condition and age structure of plant communities (eg, this will help evaluate how plants respond to a reduction in camel numbers – over

270 have been culled already by AWC). A landscape function analysis will also be undertaken at each site to evaluate factors such as the circulation of scarce nutrients in the landscape. The first comprehensive monitoring program will occur in 2007. The sites should reveal valuable baseline data on the diversity of wildlife at Newhaven: we are certain to discover species, especially reptiles, that have not previously been recorded at Newhaven. It will be an exciting time, providing a snapshot of the land against which we can measure future responses to fire management and feral animal control.





Monitoring endangered mammals

J. Rockliff



Bilbies arrive from Queensland

R. Booth

The installation of 57 monitoring sites was a huge undertaking, with each site containing twelve pitfall traps that must be dug more than 60 centimetres into the ground. To assist in this process, a crew of thirteen enthusiastic volunteers were recruited to work with AWC ecologists. The volunteer team put in an amazing effort – long hard days, dominated by some serious crowbar work when digging pitfall traps in calcrete, gypsum and clay flats. As a consolation, the volunteers were kept company by Australian Bustards, Pied, Black and Grey-headed Honeyeaters, Crimson Chats and an abundance of other birdlife, as well as basking Thorny Devils and other reptiles. After three weeks, the volunteers had ventured into areas seldom visited and installed an impressive network of sites. However, with more than 30 additional sites still to be installed, we are looking for volunteers for the next trip ...

Marsupial Moles and Great Desert Skinks recorded

Specialised survey techniques need to be adopted to detect the presence of some species. The elusive and cryptic Marsupial Mole is one such animal. Listed as nationally endangered, the Marsupial Mole is seldom seen because it leads an almost exclusively subterranean lifestyle. However, its presence can be detected by digging 'mole trenches'. Several mole trenches were dug at Newhaven by AWC staff and volunteers and, to the excitement of all, clear signs of mole activity were detected in one trench. Widespread searches using the trench technique will be undertaken in future.

Another nationally threatened species, the Great Desert Skink, has also been recorded at Newhaven in recent months. Measuring up to 40 centimetres in length, and living communally in burrows, detailed mapping of the Desert Skink population on Newhaven will occur in the near future.

Thank you to all of the volunteers who have worked so tirelessly at Newhaven.

Scotia Wildlife Sanctuary

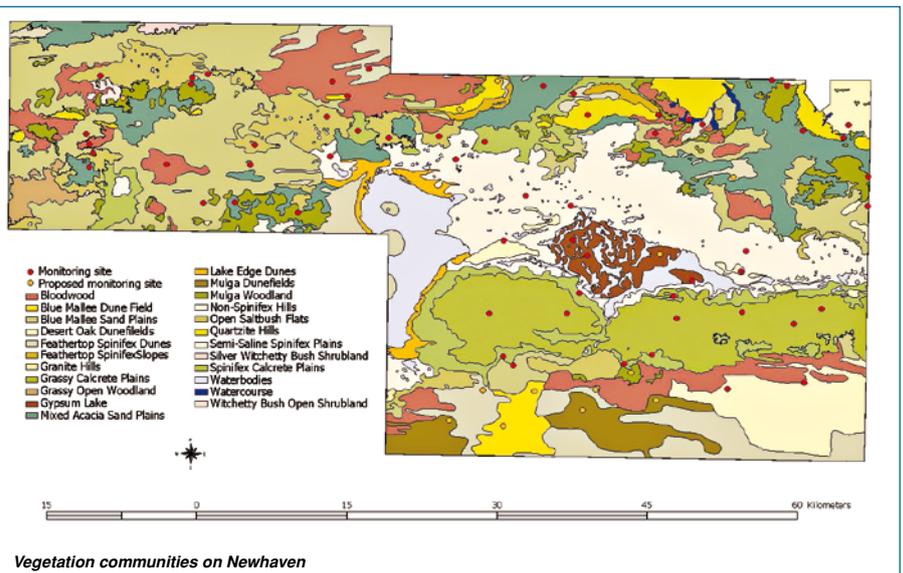
At Scotia Wildlife Sanctuary, in western NSW, AWC is establishing the largest fox and cat-free area on mainland Australia.

Seven threatened mammal species have already been released into Stage 1 of the feral-free area (4,000 hectares or 10,000 acres). It is a project that Sir David Attenborough has described as "a vitally important project for Australia and the planet". An update on key outcomes during the last few months is set out in the following paragraphs.

- The Greater Stick-nest Rat population at Scotia continues to consolidate. Tracks are regularly observed and some of the animals are known to have 'paired up'. AWC's field staff at Scotia will undertake formal monitoring of the new population in the coming months. As reported in the April 2006 edition of *Wildlife Matters*, several Stick-nest Rats died in the first few weeks after release: post mortems have revealed that the cause of death was pneumonia, probably due to immune system dysfunction related to the stress of translocation. This highlights the significant risks

associated with the translocation of any endangered species.

- AWC has recently reached another milestone in the establishment of the largest feral predator-free area on the Australian mainland. The feral-proof fence around 'Stage 2' (4,000 hectares) has been completed. The focus is now on removal of all foxes, cats and rabbits from within Stage 2, a process which is expected to take at least another 6 months.
- AWC and the Queensland Parks and Wildlife Service (QPWS) have conducted an exchange of Bilbies as part of a collaborative effort to promote the survival of the species. Two Bilbies were flown from Queensland to Scotia to enhance the genetic diversity of the Scotia population. In return, AWC has provided 8 female Bilbies to QPWS to participate in a captive breeding program.



Mt Gibson Wildlife Sanctuary



Preparing cat baits

DEC



AWC plans to reintroduce the Western Barred Bandicoot to Mt Gibson

J & M Lochman

Yookamurra Wildlife Sanctuary

At Yookamurra Wildlife Sanctuary, a different strategy is being employed to address the impact of feral predators. As we do at Scotia, AWC utilises a feral-proof fence to exclude foxes, cats and rabbits. The feral-free area at Yookamurra is 1,100 hectares and contains populations of the Greater Bilby (the western form) as well as the Numbat, the Woylie and the Burrowing Bettong.

In order to enhance the level of security offered to these vulnerable mammals, AWC has modified the fence (originally built by Earth Sanctuaries Limited) by making it a 'floppy top' fence, reinforced by electric wires. Thank you to the volunteers who have helped with this project, which will provide significantly greater protection for the threatened mammals at Yookamurra.

AWC offers a public education program at Yookamurra, hosting school visits throughout the year. A visit to Yookamurra represents an outstanding opportunity for primary and secondary school children to learn about Australia's native wildlife in a wonderful bushland setting. Details of our new education program are on the AWC website (www.australianwildlife.org).

In the April 2006 edition of *Wildlife Matters*, we reported on the launch of a collaborative project involving AWC, the Western Australian Department of Environment and Conservation and the Invasive Animals Cooperative Research Centre. The primary objective of the project is to develop a bait that will control both foxes and feral cats. These introduced predators have been responsible for the loss of small-medium sized native mammals throughout mainland Australia. Currently, there is no effective bait to eradicate cats. The absence of such a bait severely limits the prospects for successfully re-establishing threatened mammals on mainland Australia, except in fenced areas (such as at Scotia, Karakamia and Yookamurra).

A summary of progress to date is set out below:

- A baseline survey of native species was conducted in June 2006, prior to baiting for cats and foxes. 77 small native mammals were captured at 12 monitoring sites.
- In July 2006, a baseline (pre-baiting) survey of cats and foxes was conducted. The survey was conducted along a series of transects extending in total for 78 kilometres. The survey method involves counting

cat and fox tracks, with sand pads located every 500 metres. In total, 41 sets of individual cat tracks and 20 foxes were recorded.

- Later in July 2006, 70,000 baits were dropped throughout Mt Gibson Wildlife Sanctuary and on adjacent crown land.
- In August 2006, soon after baiting, another cat and fox survey was conducted. Only 1 cat track and 1 fox track was recorded on the same 78 kilometres of transects.
- In October 2006, the 78 kilometres of transects was surveyed again. This time, there were no fox tracks and no cat tracks.
- At the end of September 2006, a second survey of small mammals was conducted. On this occasion, 121 small native mammals were captured.

It is far too early to draw any firm conclusions. The results to date are promising, suggesting that the new cat bait may be effective at reducing feral cat numbers and, as a consequence, allowing small native mammal populations to recover. However, a great deal more work needs to be done to determine the extent of its effectiveness, including whether it is effective over an extended period and across different conditions (seasons, etc).



Upgrading the feral exclusion fence

M. Pohl

Faure Island Wildlife Sanctuary

Endangered mammals thrive on AWC's island sanctuary

Greater Stick-nest Rats airlifted from South Australia

In 2001, an ambitious plan was formulated by AWC staff working with a team of threatened species experts including scientists from CSIRO and the Western Australian Department of Conservation and Land Management. The plan proposed the release of 5 nationally threatened species on AWC's world heritage-listed Faure Island, transforming a pastoral lease dominated by feral goats and cats into one of the world's most important wildlife sanctuaries.

In September 2006, that plan was realised when the Greater Stick-nest Rat became the fifth threatened mammal species released on Faure Island. A total of 22 Stick-nest Rats were released: 16 from St Peters Island off the coast of South Australia and a further 6 from Salutation Island (Western Australia).

The Stick-nest Rats settled into the dune breakaway country, which contains the chenopod shrublands that are their preferred food source. As with our translocation of Stick-nest Rats to Scotia, there has been some mortality in the early stages of the release including one rat that was taken by a Brown Falcon. AWC is, however, confident that Faure Island will soon be home to a secure and expanding population of the Greater Stick-nest Rat. As our

monitoring program continues, watch for updates on our website and in future newsletters.

Thank you to the WA and SA Governments for assistance with the translocation.

Annual survey reveals endangered mammals are thriving

In July 2006, AWC's annual survey of Faure Island reinforced the outstanding value of this unique island for Australia's threatened mammals. All four species of threatened mammals that had been reintroduced prior to the 2006 survey – the Boodie, Shark Bay Mouse, Banded Hare-wallaby and Western Barred Bandicoot – are thriving on this world heritage-listed, feral predator-free haven.

The Boodies, or Burrowing Bettongs, have been particularly successful. Seventeen Boodies were initially translocated in 2002 and the population has increased dramatically. Over a nine day period during our 2006 annual survey, over 260 individual Boodies were captured in an array of cage traps that covered the island. A population estimate based on capture, mark and recapture of individuals suggested that up to 400 Boodies now call Faure Island home.



Shark Bay Mouse

J & M Lochman



Banded Hare-wallaby

J & M Lochman

In addition to the success of the Boodies, 104 Shark Bay Mice, 17 Western Barred Bandicoots and three Banded Hare-wallabies were captured during the annual survey. The reason that the capture rate of the latter two species was relatively low was that most traps were filled with 'trap-happy' Boodies, many of which were caught up to three nights in a row! During subsequent trapping of Banded Hare-wallabies in September, all females which were caught had pouch young, indicating good breeding success for this highly endangered animal.

AWC staff also sighted four new bird species on the island, including the Chiming Wedgebill, Sooty Oystercatcher, Painted Button-quail and Grey Shrike Thrush. Australian Bustards, usually a rare sight in Shark Bay, were commonly sighted and are thought to have increased in number with the removal of goats and sheep from the island.





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- Where the due date falls on a non-business day, the drawing will be made on the next working day.
- We will not change the amount or frequency of drawings arrangements without your prior approval.
- We reserve the right to cancel your monthly donation to Australian Wildlife Conservancy if three or more drawings are returned unpaid by your nominated Financial Institution and to arrange with you an alternative payment method.
- We will keep all information pertaining to your nominated account at the Financial Institution, private and confidential.
- We will promptly respond to any concerns you may have about amounts debited to your account.
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- You may terminate your monthly donation to Australian Wildlife Conservancy at any time by giving written notice directly to us (PO Box 1897 West Perth WA 6872), or through your nominated Financial Institution. Notice given to us should be received by us at least 5 business days prior to the due date.
- You may stop payment of a monthly donation by giving written notice directly to us (PO Box 1897 West Perth WA 6872), or through your nominated Financial Institution. Notice given to us should be received by us at least 5 business days prior to the due date.
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- It is your responsibility to ensure that sufficient funds are available in the

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- It is your responsibility to advise us if the account nominated for transactions with the Australian Wildlife Conservancy Fund is transferred or closed.
- It is your responsibility to arrange a suitable alternative payment method with us if the Australian Wildlife Conservancy Fund drawing arrangements are cancelled either by yourselves or by your nominated Financial Institution.
- Please enquire with your Financial Institution if you are uncertain whether direct debit functions are available on your account. (You may be charged a fee by your Financial Institution if the direct debit facility is not available on your account.)



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