



wildlife matters

australian



wildlife
conservancy

Summer 2009/10



Delivering
effective
conservation
for Australia's
wildlife

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 manages 21 sanctuaries covering over 2.5 million hectares (6.2 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 2008/09, more than 90% of AWC's total expenditure was incurred on conservation programs, including land acquisition. Less than 10% was allocated to development (fundraising) and administration.

Cover Photo: In Australia, the Palm Cockatoo is found only on Cape York. Its decline is an indication that the ecological health of Cape York is being compromised by threats such as altered fire regimes. AWC and TLLF-WildlifeLink protect the Palm Cockatoo at Piccaninny Plains. (Photo: W. Lawler).

australian wildlife conservancy
PO Box 8070 Subiaco East WA 6008
Ph: +61 8 9380 9633
www.australianwildlife.org

Welcome to our Summer 2009/10 edition of *Wildlife Matters*. 2009 has been an immensely challenging year for most organisations. One measure of the nation's wealth – our sharemarket – started the year in steep decline before turning a corner in March. The relatively rapid turnaround in this financial indicator stands in stark contrast to the relentless decline in the indicators of Australia's natural capital. Our indicators for threatened species, landscape health and matters such as water quality continue to deteriorate.

How do we turn around the decline in our natural capital? It is pretty clear that new business models are required to effectively deliver many conservation services. Business as usual will mean more extinctions and a progressive loss of the natural capital that, among other things, underpins our economic health.

AWC is at the forefront of developing and implementing a new model for conservation. In previous editions of *Wildlife Matters* we have outlined some of the key elements of this new model:

- A high proportion of our resources are invested in the field (80% of our staff are based in the field).
- We invest in science, and ensure that our science and operations are tightly integrated.
- We work closely with neighbours and other partner organisations to help deliver fire management and other programs at a regional level.

In addition to reporting on progress around the AWC estate, this *Wildlife Matters* also focuses on another key element of our conservation model – measuring the ecological health of our sanctuaries. Identifying a need to measure outcomes is, of course, nothing new. However, implementing a scientifically rigorous process of measuring ecological health across a network of protected areas, and actually integrating this information with the design of our operations, is a pioneering step by AWC within the conservation sector.

The good news is that our measures indicate we are improving ecological health: for example, populations of key species at our sanctuaries are increasing. This means we are making progress toward achieving our mission of effective conservation for the wildlife on our sanctuaries. While we need to further develop our framework for measuring health, we believe its implementation by AWC and its broader adoption by others can play an important role in turning around the decline in Australia's wildlife and landscapes (ie, our natural capital).

Thank you to all of our donors, partners, volunteers and other supporters who have helped make 2009 a successful year for AWC. A special thank you is extended to The Thomas Foundation and The Nature Conservancy, and to a special Melbourne couple, who have matched donations to AWC for various projects including our small mammal work in northern Australia and our latest acquisition, Bowra. These initiatives have been very important to AWC, and are greatly appreciated.

Finally, Merry Christmas from all of us at AWC. With your continued support, we look forward to make 2010 an even better year for Australia's wildlife.

Atticus Fleming
Chief Executive

PS AWC is pleased to offer a range of special Christmas Gifts for family and friends. See page 18 for details or visit www.australianwildlife.org

measuring the health of protected areas



Scientific measures of ecological health at Brooklyn Wildlife Sanctuary (pictured) and other protected areas are vital to inform effective conservation

W. Lawler

Every year, hundreds of millions of dollars are invested in the management of national parks, nature reserves and wildlife sanctuaries around Australia. Are these protected areas being maintained in good ecological health? This is an important question, but it remains largely unanswered. Indeed, for most of Australia's protected areas it is impossible to answer because there is no comprehensive science-based system to measure their ecological health.

Developing a framework for measuring ecological health

AWC believes that more should be done to measure and report objectively on ecological health and the effectiveness of management actions. Otherwise, there is a real risk that conservation funds will be poorly targeted and that the condition of our protected areas will deteriorate.

AWC is addressing this problem by developing and implementing a framework for measuring and reporting on the health of our sanctuaries. The application of our framework will help answer three critical questions:

- Is the protected area in good ecological health?
- Which land management strategies are improving health and which strategies need to be revised?
- How much does it cost to implement a particular strategy and what ecological return does it generate?

The concept of attempting to measure the condition of protected areas is not new. However, this will be the first time in Australia that a comprehensive, science-based program of this kind has been implemented across a network of protected areas and integrated with operational planning and financial management. We hope our pioneering steps in this direction will contribute to the development of a model that can be adopted by all protected area managers.

There are several reasons why measuring ecological health is an essential step in delivering effective conservation for any protected area.

Effectiveness: We need to measure the ecological health of a property so that we can detect whether its health is deteriorating and, if so, can take early corrective action. If ecological health is not monitored, then a property manager may keep applying the same

land management strategy without ever knowing whether that strategy is effective. A particular fire management regime may, in fact, be driving a species to extinction – unless ecological health is being measured, the decline in that species will not be detected and the fire regime will not be amended. In short: unless ecological health is measured, a land manager will not have the information required to design and implement effective, long-term management.

Efficiency: The measurement of ecological health is necessary to ensure that scarce resources are allocated efficiently. Measures of health can act as signals about resource allocation: they can help identify the combination of land management strategies that will maximise the overall health of a sanctuary for a given level of resources.

Accountability: Taxpayers and donors reasonably expect to know whether their investment in a protected area is being safeguarded. Measuring and reporting on ecological health discharges this responsibility, ensuring donors and taxpayers know how their funds are spent and whether a healthy protected area is being delivered.

measuring the health of protected areas

When should we regard a protected area as being in good ecological health?

AWC's mission is the effective conservation of all Australian animal species and the habitats in which they live. We believe that effective conservation is delivered for the species and habitats on an AWC sanctuary when that sanctuary is in good ecological health.

There are many technical and practical challenges involved in measuring ecological health. However, AWC is developing and implementing a scientifically rigorous system that provides a robust measure of ecological health for each of our sanctuaries.

AWC defines a property as being in good health when the following conditions are satisfied:

- Native species have been retained (and, where necessary, restored).
- Ecological processes are functioning.

In other words, a property is not in good health if it has lost species or is continuing to lose species, or if ecological processes such as water and nutrient cycling have been disrupted because of vegetation loss and soil erosion.

An indirect way of defining ecological health is by reference to the level of threatening processes. Generally speaking, if the level of all threatening process is reduced below ecologically meaningful thresholds, this provides an indication that the property is in good condition.

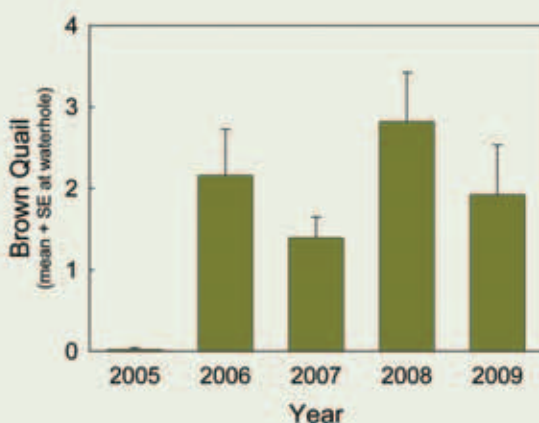
How does AWC measure whether native species are being retained?

Each year, we will set out to measure whether species are being retained at each of our sanctuaries. Of course, we cannot directly measure the population of every species at every sanctuary. Instead, we will carefully select a suite of species to measure which, in combination, provide a good signal about the full range of biodiversity on the sanctuary, including any priority threatened species.

For example, the nationally threatened Purple-crowned Fairy-wren has been selected as one of the indicators of health at Mornington Wildlife Sanctuary. This bird lives exclusively in the thick vegetation that lines the creeks of the tropical savannas, a unique habitat that is easily damaged by stock and intense fires. Following such damage, the wrens are one of the first species to disappear. This makes them an early warning system for the general integrity of riverine

Case study: Brown Quail as an indicator of ecological health

Brown Quail live in the thick grass of the tropical savannas. The species is sensitive to changes in ground cover, including any reduction in cover resulting from frequent fire and overgrazing. For this reason, the Brown Quail has been chosen by AWC as an indicator of the health of the grass layer at Mornington and of other species that rely on a healthy ground cover. As indicated in the accompanying graph, the numbers of Brown Quail counted during annual censuses increased following the removal of stock in 2004 and 2005 and active fire management at Mornington. This is an indication of improving ecological health.





Measuring ground cover at Mornington

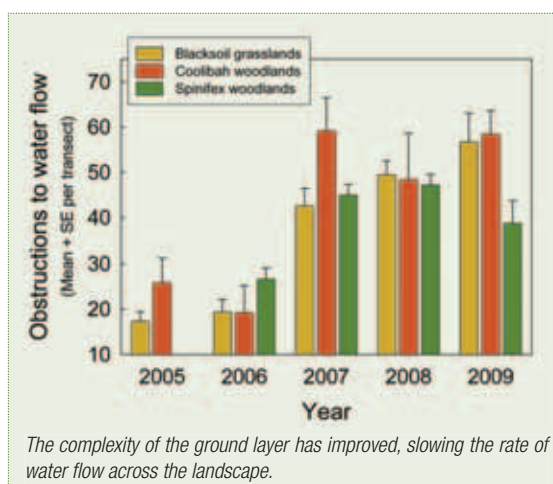
J. Augusteyn

vegetation (see page 11). Similarly, the population size of endangered Yellow-footed Rock-wallabies at Buckaringa is sensitive to changes in the densities of feral goats and foxes; their persistence in the landscape demonstrates that the pressure from feral animals is reduced, and therefore acts as a positive indicator for a whole range of native fauna (see page 13).

For each species that we measure, we will set a threshold or target that we believe represents “good health”. However, setting an appropriate target requires a good understanding of the ecology of that species. In many cases, we will need to undertake additional research to identify the appropriate long-term target or threshold for our indicator species (eg, what is a “healthy” population size for Purple-crowned Fairy-wrens in the Kimberley?). Many of our initial thresholds or targets will therefore need to encompass a range of values, partly to account for the variation inherent in natural systems, but also in recognition that our understanding of most ecological issues is incomplete. Thresholds will be refined over time as data accumulates, and in the meantime, some targets may be set relative to our baseline (eg, increase the population of Yellow-footed Rock-wallabies compared to the population when AWC acquired Buckaringa).

How does AWC measure whether ecological processes are functioning?

Ecological processes refer to the crucial life support systems of natural communities - the way that water and nutrients are cycled through the ecosystem, the stability and complexity of the species web, and the appropriate balance of disturbances like fires and flooding. At each sanctuary, we will measure the status of the most important ecological processes, either directly or indirectly. For example, to measure whether water cycling is improving, we measure the complexity of the soil surface and grass layer (not the water cycle itself). Most threats like vegetation clearing, increased fire intensity and grazing have simplified the soil surface and resulted in higher water run off speeds, which in turn is related to higher rates of nutrient loss, and erosion. Although we don't know what the ideal soil surface complexity is, nor the ideal water run-off rate, we can safely assume that changes to the ground layer and soil surface which slows the rate of water flow indicates an improvement in ecological health (because water will penetrate the surface rather than running off into creeks too rapidly).



Measuring the impact of threatening processes

On each sanctuary, we will aim to measure and report on the level of every material threat, even if it is not practicable for us to abate that threat (eg, cane toads). In other words, we think it is important to undertake a comprehensive appraisal of the pressure on species and ecological processes (rather than just measure what a manager chooses to manage). Our aim is to abate threats to the point where their impact on species or processes is ecologically insignificant. Our thresholds or targets for threat levels are set accordingly. Where we currently lack the knowledge to define a threshold that is “ecologically insignificant”, we will set a conservative target. For example, until we know what density of camels causes measurable damage to the desert communities at Newhaven and Kalamurina, we will set the target density for their management at 0.1 camels per km².

Promoting a framework for measuring health

This article began with a question – do we know if our protected areas are in good health? We need to be able to answer this question objectively for all protected areas, whether it be Kakadu National Park, Wilsons Promontory, Mornington Wildlife Sanctuary or your local national park. Measuring and reporting on ecological health is an essential step in delivering effective conservation. If health is not measured, there is a risk that scarce resources will be poorly invested and the condition of our protected areas will deteriorate.

The ecological health framework being developed and implemented by AWC is a pioneering initiative, made possible by the close integration of our science and operations teams and our commitment to deploying resources in the field. We hope it will lead to a model that can be adopted by all protected area managers.

biological surveys across 6 million acres

Around 80% of AWC staff are based in the field, including many dedicated field ecologists who collectively have responsibility for a massive biological survey program across AWC's sanctuaries. From Cape York to the Kimberley, and from the south-west forests to the Flinders Ranges, our staff have undertaken over 52,000 trap nights in 2009, along with a range of other survey techniques. This level of investment in the biological exploration of Australia is unparalleled within the non-government conservation sector.

Why do we invest so heavily in biological surveys?

A distinguishing feature of AWC's approach to conservation is our commitment to science. As part of our science program, we aim to carry out detailed biological surveys every year at each sanctuary. There are two key objectives:

- Identifying the species which are present on the sanctuary (ie, an inventory).
- Evaluating ecological health by measuring trends in the population of indicator species over time.

In turn, this helps us measure progress against our mission. The inventory component allows us to report on the number of animal species on AWC sanctuaries and the ecological health component indicates whether we are providing *effective conservation* for those species.

In 2009, AWC conducted surveys across 19 sanctuaries involving, amongst other survey techniques:

- 52,718 trap-nights
- 1,302 bird surveys
- 2,835 sandplot-days
- 487 vegetation surveys

AWC's biological inventory statistics

The AWC property portfolio incorporates a spectacular array of ecosystems ranging from some of Australia's wettest country (the world heritage-listed rainforests at Brooklyn can receive more than 5,000 mm in a year) to some of Australia's driest country (Kalamurina can receive less than 100 mm in a year). This diversity explains why the AWC estate protects such a high proportion of Australia's wildlife.

AWC sanctuaries protect:

- 83.3% of all landbird species
- 66.9% of non-marine mammals
- 47.4% of reptiles
- 47.5% of frogs

AWC also protects 369 threatened animal species.

This means that AWC currently protects more species of mammals, birds, reptiles and amphibians than any other non-government organisation in Australia. In addition, AWC also protects more threatened vertebrate species than any other non-government organisation.



Digging in a pitfall trap at Pungalina

W. Lawler



Pitfall trap and funnel traps at Curramore

W. Lawler



Endangered Gidgee Skink at Mt Gibson

R. Lloyd



Subtropical Antechinus at Curramore

W. Lawler

Good inventories take persistent effort...

Our survey effort in 2009 was not a one-off: we maintain this level of effort each year because good inventories require persistent effort. Different groups of animals require different survey methods and skills, and often need to be carried out in different seasons, or under different conditions. For example, reptiles are usually best searched for in the summer, when warmer temperatures make them more active, and migratory birds are only present for part of the year. Desert frogs only appear after rain, and often for an extremely short period; the right survey opportunity could be a week long window after many months of dry patience.

With persistence, the survey data accumulates over time and eventually generates a highly precise inventory. For example, we estimate that Mornington, in the central Kimberley, will protect at least 376 species of vertebrate. After five years of many and varied surveys, we have confirmed the presence of 365 species (97.1%) and categorised the abundance of each of those. The unconfirmed species are two skinks, four bats, and five fish.

Brooklyn is probably the single most biodiverse parcel of private land in Australia. For example, it protects an extraordinarily high number of frogs - surveys have confirmed the presence of 37 species, and we estimate that the total frog inventory is 40 species. Eight of these are listed as threatened by the Queensland and/or Commonwealth governments.

AWC's commitment to meticulous inventory throws up some interesting challenges, including a variety of logistic hurdles associated with remote locations and extreme conditions. How do you install pitfall traps at Buckaringa in the unyielding rock of the Flinders Ranges? The answer entailed several weeks on the end of a jackhammer. (Pitfall traps are broad PVC tubes sunk into the ground; lengths of 30 cm high drift fence guide animals into the 'pit', where they wait for an ecologist to pull them out, record and release them.) On the other hand, how do you establish monitoring sites in the shifting sand dunes of Kalamurina, north of Lake Eyre? (We are still open to suggestions on that one).

...and a team of skilled staff

The surveys cover such diverse taxa and ecosystems that no single person can be familiar with it all. To deal with this, AWC has built an in-house team with a broad array of skills - botanists, herpetologists, ornithologists, mammalogists and all-rounders. Although we work in partnership with other organisations on a range of science-related issues, we believe it is essential to have a core team of skilled ecologists who can deliver the inventory work and the science program generally.

Our science team is increasingly "in demand" to assist with survey work outside the AWC estate. For example, the WA Department of Environment and Conservation recently contracted us to map the distribution of Purple-crowned Fairy-wrens across the entire Kimberley. Similarly, one of our herpetologists assisted with a fauna survey on indigenous land neighbouring Piccaninny Plains in Cape York Peninsula.

Highlights of the year

One of the thrills for a survey team is the prospect of confirming a new species for the inventory, especially if it is rare or threatened, or extends the known distribution of the species.

One of the recent inventory highlights was the discovery of the Gidgee Skink (*Egernia stokesii badia*) at Mt Gibson Sanctuary. This handsome creature is nationally endangered. It lives in family groups amongst log piles in the Salmon and York Gum woodlands of the southwest; a habitat that has been almost completely cleared. The Gidgee Skink is now rarely observed, making any record notable. Moreover, Mt Gibson lies over 70 km from the next nearest known population, and therefore represents an important range extension. Another survey scoop was finding a population of Northern Brown Bandicoots at Marion Downs, in the Kimberley. This species has disappeared from vast tracts of northern Australia. The Marion population was found living within rainforest pockets in a Boab-filled valley.

Other inventory highlights include the Gulf Snapping Turtle (possibly a new species) and the Carpentarian False Antechinus (only the 20th record ever) at Pungalina-Seven Emu, and the Papuan Sheath-tail Bat at Piccaninny Plains. These discoveries all featured in the last issue of *Wildlife Matters*.



Lindsay Malay establishing a monitoring site at Marion Downs

J. Heathcote

removing feral animals to safeguard ecological health

Along with altered fire regimes, feral animals represent the greatest threat to the ecological health of Australia's protected areas. Feral predators – cats and foxes – have already contributed to the extinction of more than 20 mammal species. Grazing by feral herbivores – horses, donkeys, buffalo and feral cattle – is a major factor in the dramatic decline of mammals across northern Australia. AWC is recognised as a leader in the field of feral animal control, delivering effective conservation through active on-ground programs and by contributing to the development of innovative new strategies and techniques.

The invasion of Australia by feral animals has hit the continent and its wildlife like an ecological tsunami. Feral cats have penetrated every corner of the continent: on the basis of AWC research at Mornington, we estimate that **in the Kimberley alone cats kill at least 300 million native animals each year**. In central and southern Australia, foxes have combined with cats to drive the planet's highest rate of mammal extinctions. Across the continent there are also millions of feral herbivores – camels, rabbits, horses, buffalo, donkeys, goats, pigs, feral cattle – destroying habitat and competing with native wildlife for food.

Every protected area in Australia is home to several of these feral species. In other words, the ecological health of every protected area is being diminished by feral animals.

On AWC properties, we are taking direct, on-ground action to reduce the impact of feral animals:

- We have removed over 4,700 large feral herbivores (camels, horses, donkeys etc) during 2009.
- Our staff have also laid over 70,000 baits for foxes and cats in the last 12 months.

However, AWC also recognises that the successful, long-term control of feral animals requires a strategic, science-based approach. In order to implement effective conservation through feral animal control, we aim to ensure our on-ground activity is informed by consideration of issues such as:

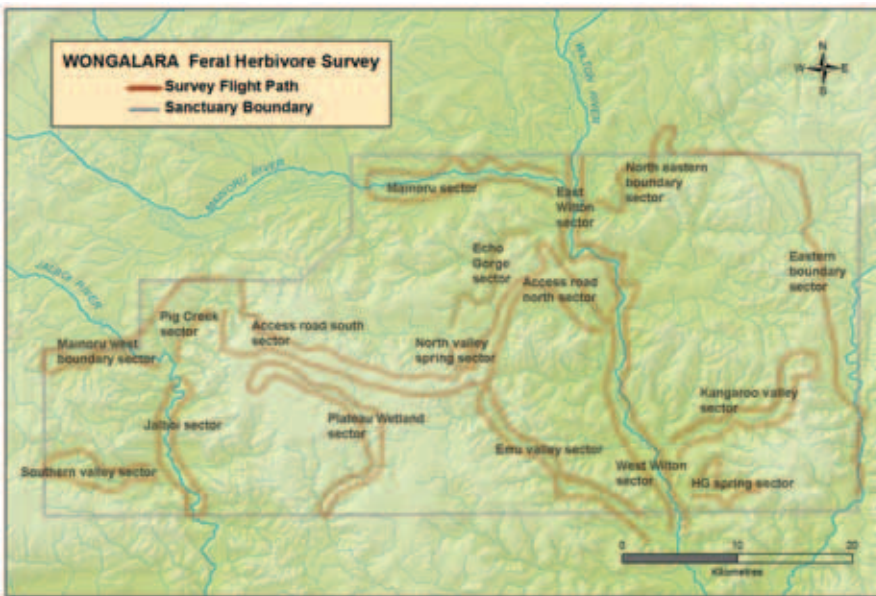
- Are our feral animal control strategies delivering a sustained reduction in feral animal densities? To answer this we need to measure the densities of feral animals on our properties.
- Does the reduction in feral animal densities deliver an increase in the population of native wildlife and an improvement in the functioning of ecological processes? To answer this, we need to measure whether ecological health improves as a result of our feral animal control (see pages 4-7).
- Are we delivering feral animal control in a cost-effective manner? To answer this, we carefully track expenditure and, in particular, explore innovative new strategies and techniques for controlling feral animals.

Feral cattle and buffalo are mustered by the Whatley family in a remote location on Wongalara



Developing and refining our strategy at Wongalara

To illustrate our approach, consider the example of Wongalara which covers nearly 2,000 square kilometres on the southern edge of Arnhem Land. This region of the Northern Territory has a very high level of total grazing pressure from introduced herbivores including buffalo, feral cattle, horses and donkeys. Feral herbivores are one factor causing the dramatic decline in small mammals across northern Australia. We therefore need to reduce total grazing pressure at Wongalara if we are to see a sustained recovery in the population of small mammals such as the Kakadu Dunnart. Soon after our acquisition of Wongalara, we



Planigales are part of the small mammal community at Wongalara

W.Lawler

began a program of mustering and culling in order to reduce the population of introduced herbivores. After almost three years, Chris Whatley (Wongalara's sanctuary manager) and his family have removed 2,232 large herbivores.

However, like almost all national parks across northern Australia, sections of the Wongalara boundary are not fenced. At the outset, we recognised there would be some re-invasion of feral herbivores from the surrounding region. In order to measure whether our feral animal control program is effective at reducing total grazing pressure, we have carried out regular aerial surveys to track changes in the relative abundance of feral herbivores. The surveys take place in November each year, when the feral herbivores are concentrated around the shrinking waters of the late dry season. Using a small two-seater helicopter, Chris flies at 40 knots, 500 foot above ground level, in a pre-determined flightpath of over 540 km in total length. Chris records the numbers and locations of all the herbivores in a 500 m wide strip along this flightpath.

The flightpath (see map above) is comprised of 17 long sections (with an average length of 31.9 km) that represent four major habitats favoured by the herbivores - riparian strips, wetlands and springs, plateau woodlands and lowland woodlands. The sections vary in length, so we calculate the herbivores observed per km, and then analyse the data for differences among habitats and years. The graph on this page highlights that, despite removing more than 2,000 horses, donkeys, buffalo and feral cattle between 2007 and 2009, there has been no significant decrease in our index of herbivore abundance during that time (although we may be starting to have an impact on feral cattle densities, the change is not yet statistically significant). In other words, the rate of immigration from neighbouring lands (and presumably some breeding by animals left on Wongalara) matches our control effort. Although the mustering is preventing herbivore numbers from increasing across the property, it is of limited effect in bringing overall feral animal densities down.

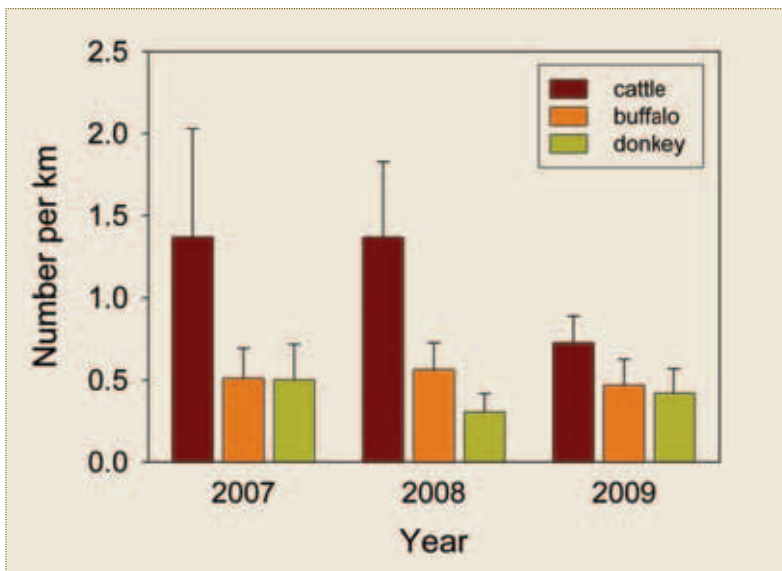
Importantly, this result is consistent with our other ecological health measures: small mammal populations have not increased despite the removal of feral herbivores. This has implications for protected areas across the north, almost all of which have significant feral herbivore populations and unfenced boundaries. Even if control programs are in place, it is likely

that total grazing pressure is not being sufficiently reduced in these protected areas.

So what is the next step at Wongalara? Fencing the entire boundary at Wongalara is impractical given the rivers, escarpments and floodplains that intersect the boundary. Faced with a similar problem at Mornington in the central Kimberley, AWC fenced-off a large area (more than 50,000 hectares) and removed all feral herbivores from within that area. This is easily the largest protected area that is kept free of feral herbivores in northern Australia. The results have been stunning with a significant increase in small mammal populations – see the December 2007 edition of *Wildlife Matters*. Subject to raising the necessary funds, AWC now plans to fence an area of around 50,000 hectares of Wongalara's best refugial habitats, from which introduced herbivores can be excluded. The cost of establishing such a fenced area will likely exceed \$300,000. However, the return is expected to be a significant increase in the small mammal population at Wongalara. Given the rapid decline of mammals elsewhere in northern Australia, such a return will be invaluable.

The feral herbivore-free area will be one part of our revised strategy. Although the average number of herbivores observed per km has not come down significantly, a closer examination of the data from our aerial surveys suggests that the mustering and culling program has successfully reduced herbivore densities in some sections of the property. For example, cattle, buffalo and donkey numbers are now lower in the west and centre of Wongalara than they were in 2007.

Accordingly, we will continue our mustering and culling program but with a revised strategy which takes into account the successes and failures to date. In addition, we will examine options for extending the boundary fence where practicable, focusing on reinvasion hotspots. Regional initiatives will be explored with our neighbours and, finally, we will consider extending the feral herbivore-free area if the initial 50,000 hectare stage delivers a significant return of small mammals.



Thank you to our partners, The Nature Conservancy and The Thomas Foundation, for their generous support at Wongalara.

fire management for conservation

One of the greatest challenges in delivering effective conservation for AWC sanctuaries is the management of fire. Implementing fire management – including prescribed burns and wildfire suppression – across a large number of properties incorporating a range of ecosystems presents enormous technical and practical issues. Evaluating the effect of fire management on ecological health is in some respects even more complex. Nevertheless, AWC has established a track record for delivering fire management and reporting on outcomes that is second-to-none.

Australia is the most flammable continent on earth. After it broke away from the Gondwana super-continent about 50 million years ago and slowly drifted north, Australia became increasingly arid. The tropical monsoonal climate, with its regular lightning storms, began to dominate the north, and its effects were felt deep inland. This led to the radiation and continental dominance of the eucalypts and their relatives and a biota that is generally resilient to fire.

Although Australia's plants and animals have evolved with fire, the specifics of fire regimes vary enormously across the continent. For example, fires burn every 1-3 years in the tropical savannas of north Australia (where regular wet seasons promote copious grass growth) but at decadal intervals in the mallee of the southeast. In addition, the 'general resilience' to fire belies enormous variation in the response of individual species to changes in fire frequency, intensity and the size of fires. There is no such thing as 'the perfect fire regime', because any one fire pattern will favour some species and disadvantage others.

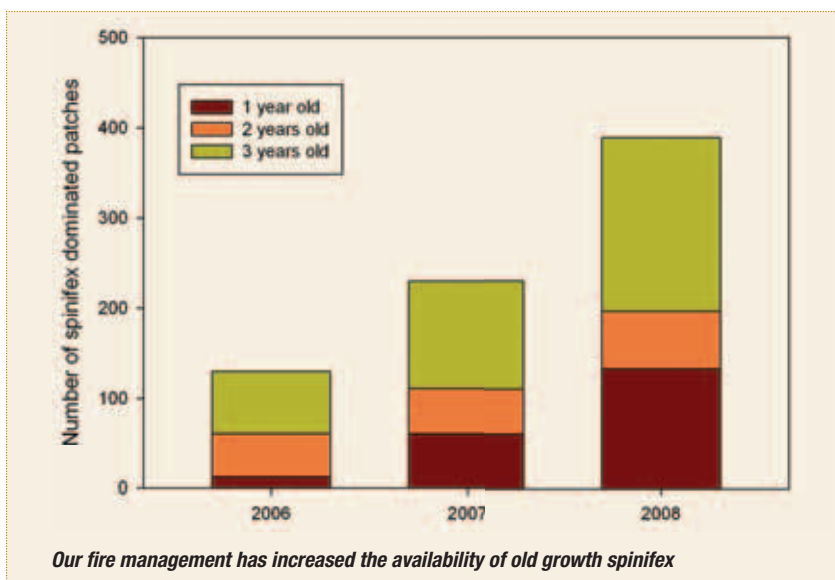
These complexities do not prevent AWC designing, implementing and monitoring ecologically-based fire management; instead, the complexities mean that our management objectives and the associated monitoring are highly context specific. In general, our fire management aims to change when and how country burns, rather than whether it burns. The most powerful way to manipulate fire patterns is to use fire itself as a tool in prescribed burning programs. The operational ingredients for fire management were outlined in articles in the last two issues of *Wildlife Matters* - in fire-prone environments like northern Australia, our managers light hundreds of small fires on each property every

year, in accord with annual burn plans and clear operational objectives.

When it comes to measuring the impact of fire management, we approach this in two ways: first, at each sanctuary we set clear targets for the 'desired' key spatial and temporal patterns that describe a fire regime (ie. when and how fires burn). The values of these targets depend on the ecosystem involved, and the requirements of high priority species. Second, we measure the impact of fire management on species that are known to be sensitive to fire. This approach is best illustrated by example.

1. Fire pattern targets

In the northern tropical savannas fires affect between 20-40% of the land area annually. Although fire is a regular and inevitable feature of the north, species and communities are sensitive to the timing, frequency and extent of fires. In recent decades, northern fire patterns have





Prescribed burning at Mornington in the Kimberley

N. Rains

become dominated by enormous (over one million hectares) and intense late dry season fires, and this shift is blamed for declines in many species. Consequently, at all our northern sanctuaries, the fire pattern targets include:

- Reducing the size of individual fires.
- Decreasing the proportion of area burnt in 'wildfires' each year.
- Increasing the diversity of patches of vegetation of different age within any one area.

We measure our success in meeting these targets by using satellite imagery to map fire patterns.

In some cases, these broad spatial targets are intersected with vegetation to produce more specific targets. For example, the savannas of Wongalara are peppered with pockets of fire sensitive vegetation in gullies and along creeks and rivers. These habitats are damaged by intense fires, so one of the fire management objectives is to limit the frequency with which these sensitive habitats are exposed to intense fires. We measure our performance against this objective by reference to a specific target: *fewer than 10% of the wet gullies on Wongalara sanctuary should be affected by an intense fire in any one year.*

Alternatively, spatial targets are sometimes intersected with the specific requirements of a threatened species. For example, our primary research at Mornington revealed the importance of old-growth (ie at least three years old) spinifex as a food resource for the endangered Gouldian Finch. We adjusted our fire management objectives to include a focus on promoting the availability of old-growth spinifex across the property, and we measure our success by counting the number of patches of old growth spinifex on Mornington. The graph (opposite) confirms that old growth spinifex is becoming more abundant across the property.

2. Fire sensitive species targets

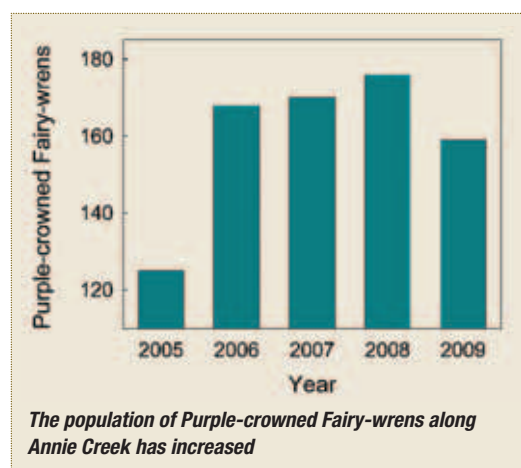
Purple-crowned Fairy-wrens live exclusively in the narrow ribbon of lush vegetation that fringes the rivers of northern Australia. Intense fires damage and eventually destroy this fragile habitat and result in the disappearance of the Purple-crowned Fairy-wren. The Kimberley subspecies has declined because of such habitat degradation and is nationally threatened. A key fire management objective is to reduce the incidence of intense fires, particularly along creeks. As a result, we expect to see populations of sensitive species like the Fairy-wren being maintained and even increasing.

At Mornington, in the central Kimberley, we set two related targets for this species. The first target was to ensure that the overall distribution of wrens did not shrink over time; the second was to ensure that the density of the population was maintained or increased. Since the first property-wide census in 2005, none of the originally identified wren sub-populations have disappeared – ie, we have met our first target by maintaining the distribution of wrens. In addition, the density of Purple-crowned Fairy-wrens has increased in the sub-population that has been intensively monitored since 2005. During this time, the vegetation along creeks has not been damaged by intense fires, and has widened and thickened as a result, providing more habitat for the Purple-crowned Fairy-wren.



Purple-crowned Fairy-wrens

W. Lawler



investing in science

A distinguishing feature of the AWC conservation model is our focus on science and, in particular, the extent to which our science program is integrated with land management at our sanctuaries. Our scientific research is directed toward improving our understanding of the ecological requirements of native species and the way in which threatening processes, such as wildfires and feral animals, impact on those species. In addition to informing the development of land management strategies, our science program helps select indicators of ecological health and the appropriate targets for each indicator.

Australian Research Council grant recognises AWC's key role in conservation science

AWC and our partners - James Cook and Charles Darwin Universities, the conservation agencies of the WA, NT and Qld governments, and CSIRO – have been awarded a prestigious grant to address one of the country's most important biodiversity issues – the decline of small mammals across northern Australia. The award of this grant, with most of the field work to be carried out on AWC sanctuaries, is recognition that we are playing a key role within conservation science.

The catastrophic recent decline of small mammals is perplexing because the vast tropical woodlands of northern Australia are structurally intact. Some combination of altered fire patterns, grazing by introduced herbivores (buffalo, donkeys, horses, cattle) and predation by feral cats is to blame. However, without better knowledge about how these processes operate and interact, effective management prescriptions are difficult to define and implement.

We know that small mammals usually disappear from areas that are burnt frequently. Research carried out at Mornington Wildlife Sanctuary has shown that small mammals are also sensitive to the presence of introduced herbivores, because the removal of cattle, horses and donkeys from an area of more than 50,000 hectares resulted in substantial mammal recovery (note that Mornington is probably the only place in the northern savannas where small mammal abundance is increasing!). Moreover, fire and over-grazing may be unleashing a third factor that is even more significant – predation by feral cats. By removing ground cover, which provides food and shelter for small mammals, fire and introduced herbivores could be amplifying the impact of feral cats.

The research supported by the ARC will help us understand the effect of feral cats on native fauna in northern Australia. Although feral cats are notoriously hard to control, we may be able to limit their impact by manipulating fire and/or grazing, as well as

The Pale Field Rat is one of the small native mammals that has suffered a dramatic decline across northern Australia



S. Murphy

managing Dingo populations (Dingos appear to suppress cat activity). To this end, the new research project will quantify cat abundance and ecology in landscapes exposed to different land management. We will also reintroduce native mammals to Wongalara Sanctuary, just below Arnhem Land, in fenced cat-free areas. The scope of the research is exceptional, with landscape-scale sites located in each region from the Kimberley to Cape York. It will help AWC achieve its mission by:

- Enhancing our ability to design effective management strategies (eg, it should help us design more effective feral control and fire management programs).
- Enabling us to define relevant ecological health targets (eg, target densities of feral herbivores and cats).

This groundbreaking research project is set to play a vitally important role in halting the decline of small mammals across northern Australia.

Feral cat captured on a camera trap at Piccaninny Plains



Conservation question:

At Buckaringa Wildlife Sanctuary, in the central Flinders Ranges, AWC protects an important colony of the endangered Yellow-footed Rock-wallaby. The Rock-wallaby is declining across its range as a result of competition from feral herbivores (goats, rabbits etc) as well as predation by foxes. We face two important conservation questions at Buckaringa: (1) Are goats having an impact? (2) By how much do we need to reduce the goat population to render their impact insignificant?

Significance for management:

We need to know how many feral goats need to be removed to produce an increase in the population of Yellow-footed Rock-wallabies. The answer is important because feral animal control gets more difficult, time-consuming and expensive as their densities are lowered. In other words – what is our target for the feral goat population; how much will it cost us and what “return” will we get in terms of an increase in the Rock-wallaby population?

Methods:

With the help of the Sporting Shooters Association, we have implemented a regular and sustained goat control program since 2006. In 2008, we studied how Yellow-footed Rock-wallabies used the landscape after feral goat densities had been reduced, and compared these data to home range information gathered in the early 1980s (when goats were not controlled). To describe Rock-wallaby movements, we fitted GPS radio-collars that take location fixes at a set frequency. The data is stored within the collar unit, and is retrieved when the collar drops off the animal at the end of the unit's battery life.

Research outcome:

Rock-wallaby home ranges in 2008 were much smaller (one tenth of the size) than the 1980s estimate (see map). We believe this difference arose because Rock-wallabies were able to find their food close to their rocky refuges when goat densities were low, rather than having to forage far out into the low-lying surrounds. This meant that the Rock-wallabies spent much less time in open areas where they are exposed to predation by foxes. Reduced competition from goats and reduced predation by foxes probably both underlie the substantial increase in the Buckaringa Yellow-footed Rock-wallaby population observed in aerial surveys carried out since the late 1990s.

Implementation:

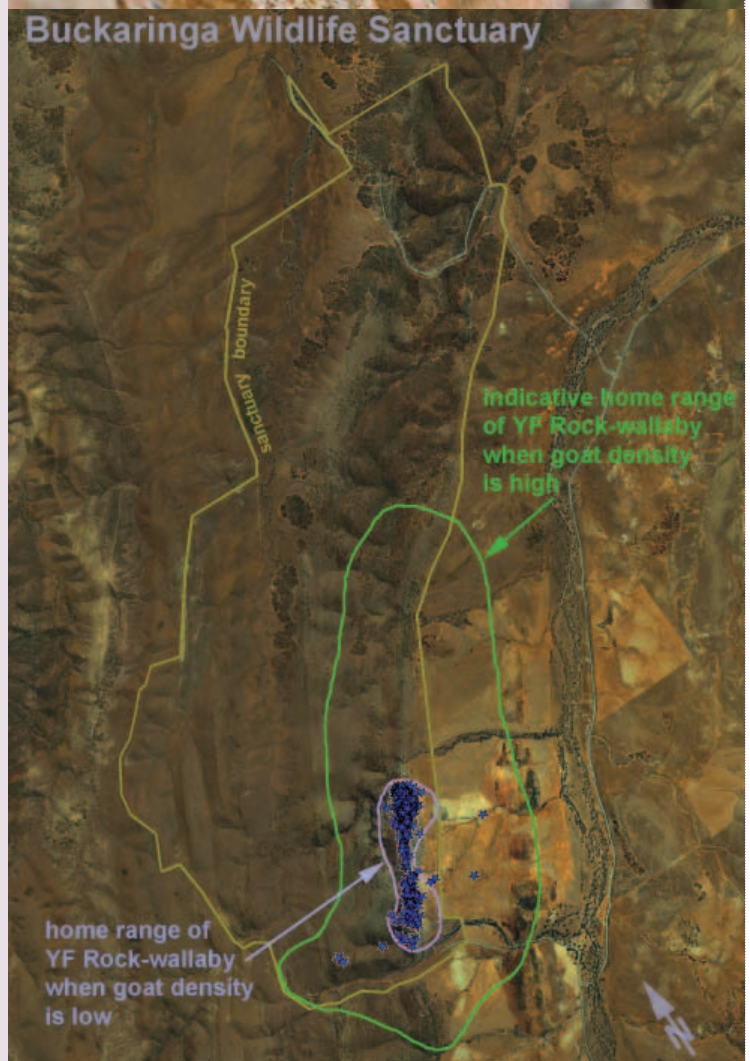
The significance of the research is that it demonstrates what level of goat control is required to ensure the survival of Rock-wallabies. The initial knock-down of almost 1000 goats in 2006 took an investment of 0.5 man-hours/goat; this has been followed by a cull of an average of 418 goats per year, and an investment of 1.3 man-hours/goat, almost three times the effort involved in the initial knock-down because goats are rarer in the landscape.

By maintaining a consistent effort of about 420 man-hours in goat control each year, we are maintaining goat density at a level that has allowed an increase in the population size of Yellow-footed Rock-wallabies. Over the next few years, we will continue to collect data on goat and Rock-wallaby population size to further refine our understanding of the relationship between these two competitors, particularly under different climatic conditions. AWC is also exploring the opportunities for regional goat control programs with other partners; this could help to reduce goat densities further, or achieve a similar outcome for a smaller investment.



A Yellow-footed Rock-wallaby at Buckaringa

Lochman Transparencies



Yellow-footed Rock-wallabies are not forced to venture into open country when feral goats are controlled

sanctuary news: updates from the field

Faure Island

The reintroduction program at Faure Island has been a resounding success (which is why it won the Biodiversity Category in the 2008 WA Environment Award)! Faure is now beginning to act as a source for translocations elsewhere. In September we sent five Western Barred Bandicoots to the Arid Recovery Project, in SA.

A focus on reptiles during the twice-annual fauna surveys has been fruitful - three new species were added to the sanctuary inventory: a blind snake *Ramphotyphlops grypus*, the Clawless Gecko and *Lerista kendricki*.

Karakamia

Incursions of both a cat and a fox earlier in the year elicited a large and sustained control effort (involving baiting programs, tracking and spotlight hunts) and associated monitoring for the feral invaders and for any impact on our threatened mammals. Both the cat and the fox were removed, and surveys showed that our populations of Quenda, Woylies and Tammar Wallabies had maintained their numbers. Nevertheless, the feral exclusion fence will be upgraded in the next few months to reduce the risk of future breaches.

Mt Gibson

Mt Gibson is set to be the site for our first translocation of threatened flora. The nationally endangered Gibson Wattle (*Acacia imitans*) will be transplanted into a small area of Mt Gibson, protected by a fence to exclude goats and rabbits, which constitute the major threat to the species. The Gibson Wattle is currently known from only six populations numbering no more than 550 plants overall. Mt Gibson protects two populations already - the only populations on conservation land. The proposed translocation will consolidate protection for the Gibson Wattle, and provide valuable information on the ecology of this plant.

The feral herbivore-free area will also provide protection for at least one other endangered plant that is present on Mt Gibson - *Hybanthus cymulosus*. If this initial project is successful, the next contender for translocation is probably *Acacia unguicula*, which is currently known from only three populations, all within an area on one square kilometre, just north of Mt Gibson.

Paruna

Ongoing surveys for the endangered Black-flanked Rock-wallaby are revealing that this reintroduced species is becoming more widespread across Paruna's rocky outcrops.

Scotia

Scotia got a wet surprise in November when it received 79 mm, or well over a quarter of its average annual rainfall (which is 250 mm) in just five days. The rain coincided with the annual fauna survey, which meant that the survey team recorded lots of frogs (the Painted Frog (*Neobatrachus pictus*) and the Desert Trilling Frog (*N. centralis*)).

During December, Numbats are being translocated into the 4000 hectare "Stage 2" feral-free area at Scotia; this will augment the stable population of Numbats already present in the original 4000 hectare "Stage 1" fenced area. Numbats are Australia's specialist 'anteater' - they use a long, flexible tongue to pick off termites and ants with great dexterity.

Numbats used to occur in a broad band across the southern part of the continent from WA to western NSW, but they were decimated by feral foxes and cats; by the 1980s the species had declined to less than 1,000 individuals in two small populations in southwestern Australia. Until its reintroduction at Scotia, the Numbat had been extinct in NSW for almost 100 years.



Marion Downs is a refuge for small mammals such as this Northern Brown Bandicoot, captured in a recent survey



Scotia is one of the last strongholds for the Numbat

S. Wormleaton



Lake Gladstone is the largest natural wetland in the central Kimberley



Swanie completing the bird hide at Lake Gladstone

R. Faulkner

W. Lawler

Mornington

AWC hosted a workshop at Mornington in November to help design a biodiversity monitoring framework for the Kimberley. The framework will be consistent with AWC's Ecological Health Monitoring Framework; it will be rolled out on high priority conservation land managed by the Department of Environment and Conservation, and integrated with their fire management. Senior staff from AWC, DEC and the Department of Food and Agriculture all attended the workshop.

AWC and our pastoral neighbours worked together in 2005 to fence off Lake Gladstone, the Kimberley's largest natural wetland, situated on the boundary between Mornington and Glenroy Station. Following the exclusion of cattle from this nationally significant wetland, the vegetation has recovered spectacularly. In November, we built a bird hide on the edge of the wetland so that visitors can enjoy the spectacle of hundreds of Plumed Whistling Ducks, Magpie Geese, Brolgas and many other species of waterbird.

Buckaringa

The first comprehensive fauna survey has just been completed at Buckaringa Sanctuary, in the Flinders Ranges. The survey revealed a particularly rich reptile fauna and a high abundance of bats. 2009 has also marked a year of concerted wheel cactus control - approximately 1000 plants have been poisoned so far, largely clearing the noxious weed from half the property. Goat, rabbit and fox control has been ongoing and is making a major contribution towards the protection of the endangered Yellow-footed Rock-wallaby.

Yookamurra

The education program has been in full swing all year with regular visits by school groups. The young visitors get a first hand insight into AWC's threatened species reintroduction program and the challenges of feral animal control. Integrated control of rabbits and foxes has been the focus this year at Yookamurra.

North Head

The Spring 2009 issue of *Wildlife Matters* highlighted AWC's role in the conservation of North Head Sanctuary in Sydney. This spectacular headland protects the largest remnant of Eastern Suburbs Banksia Scrub, an endangered population of Long-nosed Bandicoots and a number of other threatened plants and animals.

AWC is a partner in an innovative project that will examine the potential for restoring the ecological health of the Sydney coastal scrubs. The project will trial the reintroduction of native species that are able to out-compete feral black rats, in tandem with a black rat control program. These omnivorous pests prey upon the young of the Bandicoots, suppress recruitment of native plants, and are partially responsible for the loss of some native species from North Head. This restoration research is funded by the Australian Research Council; the partner organisations are the University of NSW, the University of Sydney, NSW DECC, and Landcare Research NZ.

Our Long-nosed Bandicoot project is up and running - a dozen Bandicoots have carried radio-transmitters for up to three weeks each. Over 50 volunteers helped track the Bandicoots. This work confirmed there is movement between the sub-populations that occur on North Head, which is promising news for the Bandicoots. Our next challenge is to confirm that the two sub-populations are interbreeding, to ensure that genetic isolation is not a risk.



Wartikinpiri and Yaripilangu Ranges on Newhaven, both home to populations of the threatened Black-footed Rock-wallaby



Clarrie Shadforth fencing off the coast at Seven Emu

R. Beament

W. Lawler

Newhaven

During 2009, extensive surveys on the rocky ranges of Newhaven confirmed the locations of three new populations of the nationally threatened Black-footed Rock-wallaby. This species has declined drastically in the past 200 years because of competition from introduced herbivores, predation by foxes, and changed fire regimes. AWC staff are working with the Central Land Council to extend these surveys onto nearby Aboriginal land.

Kalamurina

The inaugural fauna survey at Kalamurina took place in September this year. The survey team had to contend with savage windstorms and shifting sand dunes as well as rain! The floodwaters that came down the Warburton earlier in the year have subsided, leaving regenerating Coolabah in their wake. Exclusion fences have been erected around some replicated plots to allow us to quantify the impact of rabbits on the recruitment of this desert tree.

The flooding of the ephemeral rivers that feed Lake Eyre brought an influx of camels. These were quickly removed (214 in total), along with 182 feral horses and cattle, in order to protect the fragile desert ecosystems.

Marion Downs

The first comprehensive survey at Marion Downs revealed a population of Northern Brown Bandicoots living in thick riparian vegetation and rainforest gullies in the Phillips Range. The find is significant because the species has declined from vast tracts of northern Australia.

Lindsay Malay and a small team from the nearby Tirralintji Community have worked hard, through the heat of the early summer, to erect new fencing that will allow us to control feral cattle more effectively, and thus ease the pressure on some areas of Marion that have been overstocked in the past.

Pungalina-Seven Emu

Hot on the heels of the enormously exciting fauna survey at Pungalina-Seven Emu in June (documented in the previous issue of *Wildlife Matters*), Frank and Clarrie Shadforth have continued the work of erecting a fence to exclude introduced herbivores from the conservation area of Seven Emu. The fence now extends from the Robinson River, east as far as Seven Emu Creek. The next construction stage will see the fence continued to Stockyard Creek, before it turns to head south towards the Pungalina boundary.

Plans are already afoot for the next fauna survey (in May/June 2010); the Garrawa Rangers will be part of the survey team this year, soon after helping with the prescribed burning program in April/May.

Wongalara

The process of vegetation mapping has begun at Wongalara; this is an exacting task based on the interpretation of aerial photography coupled with months of painstaking ground-truthing. The final product will be the most detailed property vegetation map in the NT, and will be a foundation stone for all management and ecological activities.

The third annual survey of Dingo and feral cat densities, plus native fauna abundances, took



Mt Zero Wildlife Sanctuary

W. Lawler

place over July to November; preliminary analyses are indicating that Dingos are effective at suppressing the activity of cats, and that this leads to a positive response in the native fauna.

The infrastructure, roads and fences at Wongalara are constantly being improved, all of which helps the sanctuary managers and other staff to deliver better conservation management. Chris Whatley (Wongalara Sanctuary Manager) and his family removed over 900 donkeys, buffalo, feral cattle and pigs this dry season.

Mt Zero-Taravale

The relentless battle against lantana has continued during 2009 on Mt Zero-Taravale. In 2004 the lantana infestations at Mt Zero-Taravale covered 2,391 hectares. By 2009, the density of lantana has been reduced by half in 80% of this original area, and by a fifth in the remaining 20%. Unusually dry conditions during 2009 have helped with the successful implementation of restorative fire management in about 70% of the tall wet sclerophyll forests.

Curramore

The battle against lantana has also continued - successfully - at Curramore. In addition, the outfall of the Cedar Creek dam was diverted back into its original watercourse this year, which will prevent erosion problems associated with the outflow.

Brooklyn

The drier western parts of Brooklyn are showing strong signs of recovery after five years of reduced stocking density and feral horse control. Several thousand hectares of Normanton Box (*Eucalyptus tardecidens*) open woodland now support a substantial ground cover of native grasses. Previously, heavy grazing had left almost nothing to protect the soil (2.5 million cubic metres of which is estimated to have been scoured from the area as a result).

The new cover of soil algae and native grass is a tangible sign that ecosystem function is being restored. The science team are confident that this will be reflected in the diversity and abundance of seed eating birds and small mammals recorded in the next few surveys.

The rubber bush weed (*Calotropis procera*) has a very limited future on Brooklyn. Members of an Australian Geographic expedition had the pleasure of eliminating the last significant infestations of this serious weed. Two other serious weeds, hymenachne and gamba grass, have already been effectively eradicated from Brooklyn.

Piccaninny Plains

The numbers of introduced herbivores continue to come down at Piccaninny Plains; in the last six months, almost 500 feral cattle were mustered and put behind wire, and 898 horses were removed. An ingenious pig trap helped remove 798 pigs from the most extensive area of wetlands near the Archer River. As a result, the wetlands have retained vegetation and water late into December for the first time in many years (normally the herbivores churn up the wetlands into a muddy pan).

Piccaninny Plains is jointly owned by AWC and TLLF-WildlifeLink: see the Spring 2009 *Wildlife Matters* for more information on this exciting collaboration.

corporate partners help deliver effective conservation



On 1 November 2009, Australian Wildlife Conservancy celebrated the first anniversary of our partnership with Exterra, Australia's leading brand for environmentally friendly termite management in the urban market.

Under the partnership, proceeds from the sale of each termite management system are donated to AWC to support the conservation and management of northern Australia's threatened wildlife and their habitats. From the outset Exterra set an ambitious target. Undaunted by the global financial crisis, and no doubt assisted by the quality of their product, Exterra and its highly motivated pest control managers met the challenge head on and have successfully contributed around \$150,000 to AWC in the past 12 months. This is a remarkable effort - the equivalent of funding the protection of around 50,000 hectares of northern Australian's ecosystems and wildlife!

In addition to providing AWC with direct financial support, Exterra has run a national competition to raise awareness about the plight of Australia's threatened wildlife. The winner has now been drawn and he and his family will enjoy a weekend in the field at AWC's Scotia Wildlife Sanctuary.

AWC is grateful for the extraordinary support of Exterra and its team of pest control managers, who have made a vital contribution to the conservation of northern Australia including threatened species such as the Gouldian Finch and the Northern Quoll.



Twelve months ago, Officeworks introduced a new range of environmentally friendly bags for sale through its stores, the profits of which are donated to AWC. We are pleased to announce that the partnership has now raised \$50,000 for conservation. This has supported the conservation of over 16,000 hectares of tropical savanna across the Kimberley, the Gulf and on Cape York.

Our partnership is a double win for the environment – reducing the use of plastic bags and protecting some of northern Australia's most important habitats. We are proud to be working in partnership with Officeworks to provide a more secure future for Australia's wildlife.

Donate the perfect gift this Christmas

Give a gift that will make a real difference this Christmas. Donate to any one of our 5 projects and receive a personalised e-Gift certificate for your friend or family member to show how they have helped save endangered animals and protect threatened ecosystems.



Your tax deductible gift can help:

- protect 2 hectares of tropical savanna at Mornington Wildlife Sanctuary in the Kimberley, home to one of the largest remaining populations of the endangered Gouldian Finch;
- protect 4 hectares of mallee woodland at Scotia Wildlife Sanctuary, home to the endangered Numbat;
- protect one Woylie at AWC's Karakamia Wildlife Sanctuary for 12 months;
- sponsor the protection of 1 or 2 acres at Bowra; or
- sponsor AWC's on-ground conservation programs across the 21 sanctuaries nationally.

Visit our Christmas Appeal page online at www.australianwildlife.org



Gouldian Finch

S.Murphy

AWC wins biodiversity award



AWC has been honoured with the 2009 WA Environment Award for Biodiversity Conservation. The award recognises AWC's success in delivering effective conservation for the endangered Woylie (or Brush-tailed Bettong) at Karakamia Wildlife Sanctuary. It is the second year in a row that AWC has won the Biodiversity Category (we were a joint winner last year for our Faure Island project).

The Woylie is one of Australia's most endangered mammals. Originally widespread across almost the entire southern half of the continent, by the 1970s the Woylie had contracted to three small populations in the south-west. The species then made a comeback during the 1980s and early 1990s in response to fox control under the Western Shield program. However, since 2000 the Woylie population has suffered a catastrophic decline of around 80%. There is no consensus on the causes of this decline, although AWC believes the key factor is predation by feral cats.

AWC's founder, Martin Copley, began the process of establishing Karakamia in 1991. By 1994, the feral proof fence had been constructed around the sanctuary and the first translocation of Woylies to Karakamia was carried out. In this fox and cat-free environment, the population of Woylies in the forests of Karakamia increased to 450-500 animals, where it remains today. Even when the Woylie population began to plummet elsewhere in the south-west, the species continued to thrive under AWC's stewardship at Karakamia. In fact, Karakamia has played a key role in seeking to repopulate other areas, with over 600 Woylies transferred from Karakamia to national parks and other AWC sanctuaries including Scotia.

The Karakamia population is now the only high density population of Woylies in Western Australia that is not in steep decline. With help from our supporters, AWC is playing a key role in saving this species from extinction. We thank our many partners who have assisted with the Karakamia project including the WA Department of Environment and Conservation who provided the original animals for release at Karakamia.

The endangered Woylie at Karakamia



Lochman Transparencies

bowra

Supporters from around Australia have so far helped raise \$354,000 to assist with the acquisition and management of Bowra. These donations have been matched by a generous AWC supporter, meaning that in total we are getting close to our target of \$1 million.

Under transitional arrangements agreed with Ian and Julie McLaren, AWC is proposing to assume management of Bowra toward the end of March 2010. We hope Ian and Julie will remain involved with the conservation of this very special property.

The Mulga Lands have experienced a very dry winter, with several extensive dust storms in the last few months. Bowra's conservative stocking history means that it retains more grass cover and loses less topsoil in these wild weather events than surrounding areas. The dry conditions also concentrate Bowra's prolific birdlife around the permanent waterholes of Gumholes Creek.

We still need to raise an additional \$146,000 for Bowra, all of which will be matched. Please donate and help provide a secure future for Bowra and its birdlife (see form with this newsletter, or visit www.australianwildlife.org). **Your tax deductible gift will be matched until we reach our target.**

A special thank you to the Australian Government for its support under the National Reserve System program, as well as to Birds Queensland, Birds Australia and Bird Observation and Conservation Australia (BOCA).



Juvenile Bourke's Parrots at Bowra

D. Portelli

we urgently need your help

yes, I want to help save Australia's threatened wildlife



Wongai Ningaui

Lochman Transparencies



Grey Falcon

D. Portelli



Mulga Parrot

W. Lawler



Bowra

Please direct my donation to Bowra.

AWC operations generally

Please direct my donation to AWC operations around Australia.

Commemorative Certificate

I have donated \$300 or more or made a monthly pledge of \$35 or more. Please send me a certificate commemorating my contribution.

Support AWC this Christmas

To give a tax deductible Christmas gift that supports an AWC project, go to www.australianwildlife.org or, if you do not have internet access, call Beth/Vanessa on +61 8 9380 9633.

Name: Dr/Mr/Mrs/Ms
Address:
Suburb: State:
Postcode: Country:
Telephone: W) H)
E-mail:

Credit Card Details

Mastercard Visa AMEX Diners
Card Number
Expiry Date
Cardholder's Name:
Signature:

Direct Debit Request

I / We request that you draw by way of the Direct Debit System, \$ per month, for the payment of a monthly donation to Australian Wildlife Conservancy Fund.
My/Our Account details are
Institution:
Account Name:
Account Number: BSB:
I / We acknowledge that this Direct Debit Request is governed by the terms of the "Direct Debit Client Service Agreement" (set out below).
Signature:
Print Name: Date:

MONTHLY PLEDGE

I wish to become a regular supporter and give a tax deductible donation each month of: \$10 \$25 \$50 \$ Other (minimum \$10)
I wish to pay by: Direct debit from my bank account Credit card

DONATION

I would like to make a single tax deductible donation of: \$100 \$300 \$1000 \$5000 \$ Other (minimum \$10)
I wish to pay by: Credit card Cheque/Money Order

Bequests

I am interested in making a bequest in my will. Please send me some information.
Please tick this box if you do NOT wish to receive news and information on our latest initiatives and progress.

Our Commitment to You, Drawing Arrangements:

- 1. We will advise you, in writing, the details of your monthly donation to Australian Wildlife Conservancy (amount, frequency, commencement date) at least 3 calendar days prior to the first drawing. Thereafter each drawing will be made on the 15th day of each month (or part thereof as specified).
2. Where the due date falls on a non-business day, the drawing will be made on the next working day.
3. We will not change the amount or frequency of drawings arrangements without your prior approval.
4. 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.
5. We will keep all information pertaining to your nominated account at the Financial Institution, private and confidential.
6. We will promptly respond to any concerns you may have about amounts debited to your account.
7. We will send a receipt within 45 days of the conclusion of the financial year summarizing your entire year's gifts for tax purposes.

Your Rights:

- 1. You may terminate your monthly donation to Australian Wildlife Conservancy at any time by giving written notice directly to us (PO Box 8070, Subiaco East WA 6008), 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.
2. You may stop payment of a monthly donation by giving written notice directly to us (PO Box 8070, Subiaco East WA 6008), 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.
3. You may request a change to the donation amount and/or frequency of the monthly donations by contacting us on (08) 9380 9633 and advising your requirements no less than 5 business days prior to the due date.
4. Where you consider that a drawing has been initiated incorrectly (outside the monthly donation to Australian Wildlife Conservancy arrangements) you may take the matter up directly with us on (08) 9380 9633, or lodge a Direct Debit Claim through your nominated Financial Institution.

Your commitment to us, Your responsibilities:

- 1. It is your responsibility to ensure that sufficient funds are available in the nominated account to meet a drawing on its due date. (You may be charged a fee by your Financial Institution if the account details are incorrect or there are insufficient funds in the nominated account when we attempt to deduct donations.)
2. It is your responsibility to ensure that the authorisation given to draw on the nominated account, is identical to the account signing instruction held by the Financial Institution where your account is based.
3. It is your responsibility to advise us if the account nominated for transactions with the Australian Wildlife Conservancy Fund is transferred or closed.
4. 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.
5. 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.)



Please post this form to:

australian wildlife conservancy - Reply Paid 8070 Subiaco East WA 6008 Phone: 08 9380 9633 www.australianwildlife.org ABN 36 068 572 556