

wildlife matters

australian



wildlife
conservancy

Spring 2015

Return of the Mala

The planet's largest
feral cat eradication project



Saving Australia's threatened wildlife



Welcome to the Spring 2015 edition of *Wildlife Matters*.

In this edition, we are proud to announce a conservation project of global significance. At Newhaven Wildlife Sanctuary, in central Australia, AWC will undertake **the planet's largest feral cat eradication project** by establishing a massive feral predator-free area of at least 65,000 hectares (650 square kilometres). Within this area, AWC will restore mammal populations on a scale never before attempted. A vast area of central Australia will be transformed from a marsupial ghost town to a landscape teeming with small mammals, similar to the wildlife-rich landscape witnessed by early European explorers.

Central to the Newhaven initiative is our long-standing partnership with the Ngalia-Warlpiri, the traditional owners of Newhaven. In addition to the socio-economic benefits (such as employment), AWC will work with the Ngalia Warlpiri to return the Mala to an important Dreaming site. The Mala, currently extinct in the wild on mainland Australia, is one of at least 10 nationally endangered mammals which will benefit from the project: others include the Black-footed Rock-wallaby, the Golden Bandicoot and the critically endangered Central Rock Rat.

The Newhaven project is supported by the Federal Government, which will invest \$750,000 (or 20% of the capital cost of the project's first stage). Funding from the Federal Government was announced by the Minister for the Environment, the Hon Greg Hunt MP, in conjunction with the launch of Australia's first **National Threatened Species Strategy**. AWC's leadership in the field of threatened species conservation helped inspire and shape core elements of the National Strategy:

- A key objective of the Strategy is to increase the trajectory of at least 20 threatened mammals and 20 threatened birds by 2020, a goal initially proposed at AWC's launch of the *Mammal Action Plan* in 2014. Given that arguably only four threatened mammals have improved their trajectory in the last 15 years, the goal of improving the trajectory of 20 mammals in the next five years is appropriately ambitious. AWC will play a key role through projects such as Newhaven.
- Reflecting AWC's ground-breaking work on feral cats, the Strategy includes short term targets to establish 10 new feral predator-free areas and deliver best practice cat control over 10 million hectares.

AWC's conservation model is increasingly recognised for its success in delivering exceptional and measurable outcomes at low cost. Mt Gibson (see pages 10 -11) is an example, as is our award winning fire management program across northern Australia. In the science field, AWC's leadership is reflected in the fact we are the only non-government partner in the new Threatened Species Recovery Hub, a \$30 million collaboration under the National Environmental Science Program.

Your generous support has been vitally important in the ongoing development of AWC and our conservation model. Through your donations and other support, you have enabled AWC to mobilise field staff across Australia, delivering practical and effective conservation in places like the Kimberley, the Top End and Lake Eyre. Thank you for your support - I hope you enjoy reading about our progress.

Atticus Fleming
Chief Executive

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 23 sanctuaries covering over 3.15 million hectares (7.75 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.
- Over the last ten years, around 88% of AWC's total expenditure was incurred on conservation programs, including land acquisition, while only 12% was allocated to development (fundraising) and administration.

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Cover image:

Mala at AWC's Scotia Wildlife Sanctuary
Photo by W Lawler

Historic partnership in the Pilliga forest and at Mallee Cliffs



O Finemore

AWC Science and Conservation Manager, Dr John Kanowski, and NSW NPWS Pilliga Area Manager, John Whittall assessing options in the Pilliga



The Pilliga forest is the largest forest in NSW west of the Great Dividing Range W Lawler

Australian Wildlife Conservancy (AWC) is set to partner with the NSW National Parks and Wildlife Service (NPWS) in the conservation of two iconic areas – the Pilliga forest in northern NSW and Mallee Cliffs National Park in far southwestern NSW. Under this ground-breaking initiative – the first partnership of its kind between a government parks agency and a non-profit organisation – AWC will be contracted to reintroduce mammals that are currently extinct in NSW as well as deliver complementary land management activities at both locations.

AWC and the NPWS are currently finalising details of the partnership, with implementation set to commence in early 2016. In this edition of *Wildlife Matters*, we provide a brief snapshot of the Pilliga forest. Watch out for a snapshot of the Mallee Cliffs National Park, near Mildura, in our next edition.

The Pilliga forest

The Pilliga forest, located between Coonabarabran and Narrabri, is an area of outstanding conservation significance. Covering a total area of more than 500,000 hectares, it is **the largest contiguous forest in NSW west of the Great Dividing Range**. AWC and NSW NPWS staff are currently working together to identify the best site within the Pilliga for the establishment of a feral predator-free area and the reintroduction of regionally extinct mammals such as the Bilby and the Bridled Nailtail Wallaby.

Vegetation within the Pilliga forest typically includes cypress pine, bullock and a mix of eucalypt species (e.g. narrow-leaved ironbark, Blakely's red gum, Pilliga Box, poplar box), with rough-barked apple and river red gum often found along sandy creek lines. The scale and diversity of the forest support exceptional conservation values:

- The Pilliga protects a broad range of threatened and declining bird species including Painted Honeyeaters, Diamond Firetails, Speckled Warblers, Brown Treecreepers, Hooded Robins and Turquoise Parrots. It is also a major stronghold for the Barking Owl and hosts seasonal occurrences of endangered Swift Parrots and Regent Honeyeaters. This rich birdlife means the Pilliga is designated by Birdlife International as an internationally important site for bird conservation.

- The Pilliga protects a significant Koala population, although there is evidence of a significant decline in the population in recent decades. The Pilliga is also an important site for several bat species while other notable mammals include Squirrel Glider, Black-striped Wallaby and possibly Rufous Bettong.

AWC identified the Pilliga as a priority site for the reintroduction of mammals because of the large number of regional extinctions (at least 10 mammal species have been lost from the Pilliga) and because it is likely that the return of mammals such as bettongs will play an important role in restoring and maintaining the health of the forest.

In July 2015, the Federal Environment Minister, the Hon Greg Hunt MP, launched Australia's first national Threatened Species Strategy. Featuring this photo of a Numbat at AWC's Scotia Wildlife Sanctuary on the front cover, key elements of the Strategy include commitments to:

- Improve the trajectory of 20 threatened mammals and 20 threatened birds by 2020.
- Establish 10 new feral cat-free areas, including Newhaven, and implement best practice cat control across 10 million hectares.
- Cull 2 million feral cats in the next 5 years.



Restoring the lost mammals of central Australia at Newhaven Wildlife Sanctuary

The planet's largest feral cat eradication project



Early explorers reported "countless swarms" of the now threatened Black-footed Rock-wallaby *W Lawler*



The Burrowing Bettong disappeared from central Australia more than 50 years ago *W Lawler*

- Newhaven Wildlife Sanctuary is set to host a project of global biodiversity significance – the establishment of a massive feral cat-free area covering at least 650 square kilometres (65,000 hectares). This will be the planet's largest feral cat eradication project.
- The first stage of the Newhaven project (8,000 - 15,000 ha) will create a refuge for large, wild populations of at least 10 nationally threatened mammal species including the Mala (currently extinct in the wild), the Central Rock Rat and the Golden Bandicoot.
- This project is unique - for the first time, a vast landscape in central Australia will once again be home to a diversity and abundance of mammals similar to that which existed prior to the arrival of European settlers.

The Black-footed Rock-wallaby was once abundant in suitable rocky habitat throughout western and central Australia. In the 1870's, the explorer Ernest Giles described 'countless swarms' of these beautiful rock-wallabies on the ranges in central Australia. Today, the Black-footed Rock-wallaby is a nationally threatened species, hanging on in small and scattered, low density colonies at constant risk of extermination by feral cats and foxes. It has disappeared even from the world heritage listed Uluru-Kata Tjuta National Park.

The story of the Mala (Rufous Hare-wallaby) is even more tragic. Once widespread and abundant throughout the centre, the last wild Mala population on mainland Australia disappeared in 1991, extinguished by feral cats, foxes and wildfire.

Today, central Australia is a vast marsupial ghost town. Almost every small-medium sized mammal is extinct (such as the Desert Rat Kangaroo and the Lesser Bilby) or has been banished to offshore islands or the fringes of the continent (e.g. Brush-tailed Bettongs and Golden Bandicoots). Some species hang on precariously in the region – the Central Rock Rat is critically endangered while the Bilby continues its inexorable decline. The native mammals that were once so abundant have largely been replaced by the feral animals

that preyed upon them and outcompeted them – rabbits, camels, foxes and cats. The centre is a different, much diminished place compared to the landscape which greeted early European explorers.

Newhaven sits in the heart of this vast, depleted region. The property is beautiful - dramatic quartzite ranges overlook spinifex sandplains decorated by woodlands of bloodwood and desert oak. By day, the birdlife is abundant and diverse and the reptile fauna is globally significant. As night falls, however, this spectacular landscape is nearly empty - most of the medium sized mammals have long gone. Vacant Burrowing Bettong warrens are a reminder of the mammals that for thousands of years were an integral part of this landscape, before disappearing in the blink of an eye after the arrival of foxes and cats. Black-footed Rock-wallabies still hang on like ghosts in the ranges – sightings are rare but scats provide evidence of their lingering presence.

AWC is determined to turn back the clock at Newhaven by returning small-medium sized mammals on a scale never before attempted on mainland Australia. A conservation fence will be constructed around at least 650 square kilometres (65,000 hectares), protecting a diverse array of habitats



Newhaven Wildlife Sanctuary: soon it will be home once again to a suite of mammals that have disappeared from central Australia *W Lawler*

including spinifex-clad dunes, rocky escarpments, bloodwood sandplains and ephemeral wetlands. Within this area, feral cats and foxes will be removed and rabbit densities will be suppressed to negligible levels, paving the way for the historic reintroduction of central Australia's lost mammals.

No organisation – government or private sector – has ever removed feral cats from a mainland site at this scale: it will be the world's largest feral cat eradication project. The global significance of the project is recognised by the Australian Government, which will invest \$750,000 in the first stage of the project as part of its Threatened Species Strategy. At a local level, the involvement of the Ngalia Warlpiri people – the traditional owners of Newhaven – will be critical. AWC and the Ngalia Warlpiri have worked in partnership at Newhaven for more than eight years; their specialist cat hunting skills and participation in land management will be integral to the success of this project.

Working with the Ngalia Warlpiri, AWC's vision is to restore, as far as possible, the wildlife of a large area of central Australia to the state it was in at the time the early European explorers arrived – before the impact of feral animals and altered fire regimes robbed the region of its native mammals. This involves re-establishing both the diversity of small-medium sized mammals and the sheer abundance of those animals. Success will be defined not only by the number of species that are returned but also by our ability to fill the landscape with large populations of these endangered mammals. The rocky ranges on Newhaven will once again "swarm" with Black-footed Rock-wallabies. The Burrowing Bettong warrens will be re-opened, hosting large, boisterous Bettong families led by a senior matriarch. Red-tailed Phascogales will reclaim hollows in the bloodwoods and a nocturnal walk through the sandplains will flush Mala and Golden Bandicoots, causing Bilbies to canter off with their characteristic, ungainly gait.

Species	Approx global population* (Mammal Action Plan)	Predicted Newhaven population	Increase in global population
Mala (Rufous Hare-wallaby)	4,000	18,000	450%
Black-footed Rock-wallaby**	<10,000	1,500	15%
Burrowing Bettong	15,000	22,500	150%
Brush-tailed Bettong	<18,000	9,000	50%
Golden Bandicoot	>10,000	32,500	100%+
Greater Bilby	<10,000	4,500	45%
Central Rock Rat	<1,000	1,825	180%
Western Quoll	<15,000	650	4%
Red-tailed Phascogale	<10,000	2,500	25%
Southern Marsupial Mole**	Unknown	Unknown	Unknown

Mammal reintroductions at Newhaven: preliminary predicted population size (65,000 ha)
* including other AWC sanctuaries | **small population persists at Newhaven

AWC: working with the Ngalia Warlpiri

In 2010, AWC became the first non-government conservation organisation to enter into a Native Title consent determination when a historic sitting of the Federal Court at Newhaven formally recognised the Ngalia Warlpiri as the traditional owners of Newhaven.

For more than eight years, AWC managers, Joe Schofield and Danae Moore, have worked in partnership with traditional owners and the Central Land Council on fire management, feral predator control and biological surveys, engaging indigenous rangers to assist with a range of land management tasks. An indigenous ranger base has been established on Newhaven to provide dedicated infrastructure support for ranger operations. Recent collaboration includes hunting of feral cats, especially around Great Desert Skink colonies.

The Newhaven project provides a unique opportunity to expand the AWC partnership with traditional owners through a range of engagement and employment opportunities including participation in:

- The alignment and construction of a major capital asset: the feral-proof fence.
- Tracking and removing feral cats and foxes.
- Taking guided tours which provide visitors with a unique experience: a landscape in which the lost mammals of central Australia have been restored.



Ngalia Warlpiri Rangers and AWC Sanctuary Manager, Joe Schofield, discuss the Newhaven burn plan *D Moore*



Cat and fox eradication will deliver a broad ecological dividend

In addition to the reintroduction of regionally extinct mammals, the establishment of a 65,000 hectare feral predator-free area will deliver a substantial ecological dividend for biodiversity generally:

- **Reptiles:** The reptile fauna at Newhaven includes more than 75 species, many of which are commonly eaten by feral cats. The feral predator-free area at Newhaven will protect one of the largest known populations of the threatened Great Desert Skink.
- **Birdlife:** Newhaven is renowned for its diversity of arid zone birdlife. The removal of feral cats and foxes will be a boost for ground-dwelling species such as the Bush-stone Curlew, Flock Bronzewing, Quails and Button-quails, as well as a range of songbirds.
- **Mammals:** Small mammals such as the Brush-tailed Mulgara and a range of dunnarts and native rodents will benefit from the removal of feral predators.



Mala *Jukurrpa* (Rufous Hare-wallaby Dreaming) by Tanya Nungarrayi Collins Warlukurlangu Artists Aboriginal Corporation www.warlu.com



Mala and joey W Lawler

The Return of the Mala

“Mawurrungu is where the Mala come from – to have them return....this is a very good thing.”

- Harry Jakamarra Nelson from Yuendumu

The Mala, or Rufous Hare-wallaby, is one of Australia's most endangered mammals. Once widespread across central and western Australia, there are now no naturally occurring wild populations on mainland Australia. On the mainland, it survives only in four semi-wild populations including at AWC's Scotia Wildlife Sanctuary. The 60 Mala at Scotia represent more than 10% of the entire population of the mainland subspecies.

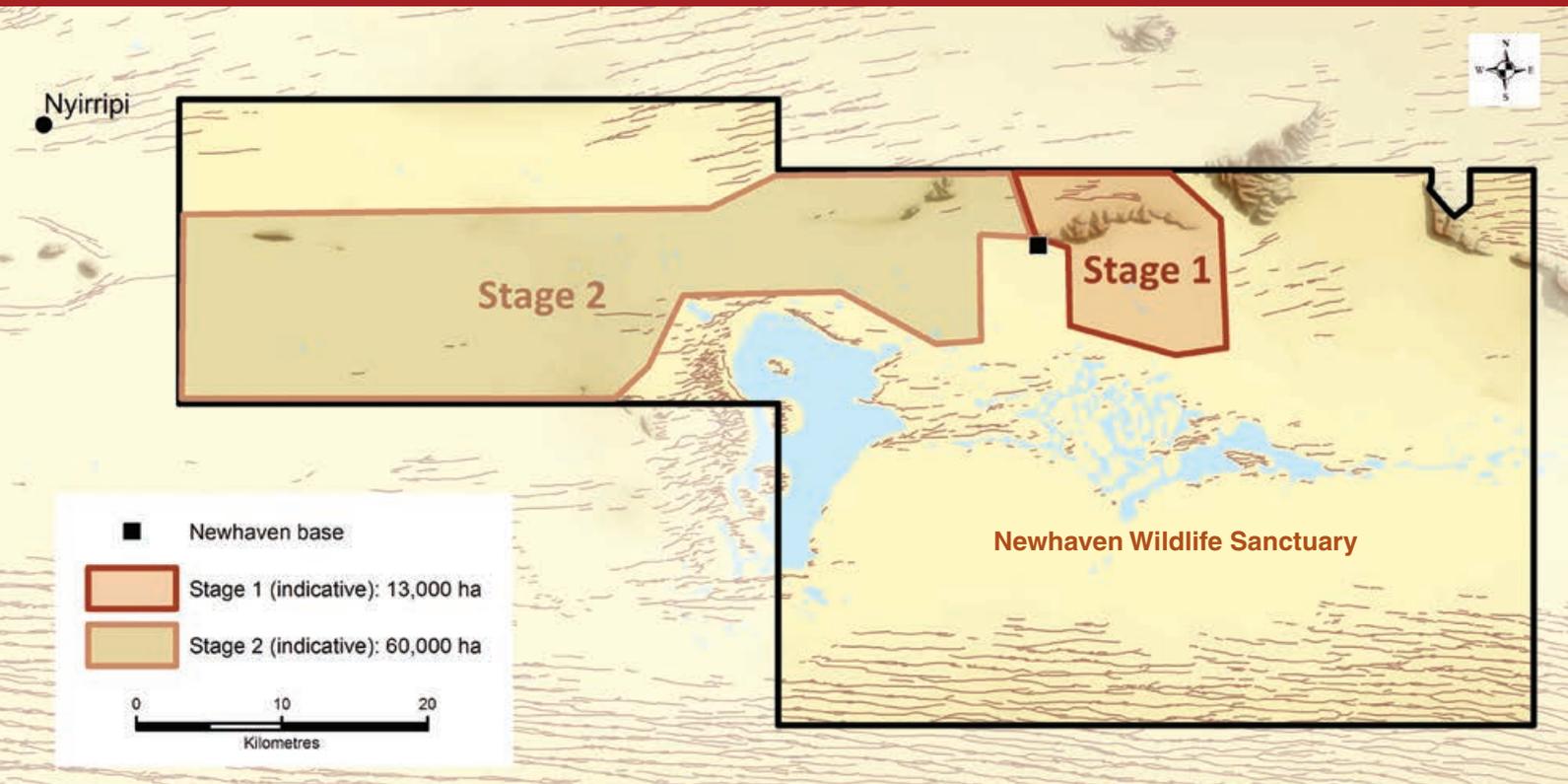
The Mala was once abundant in central Australia including in the region around Newhaven. By the 1950's, however, it had contracted as a result of wildfire and feral predators to a small population in the Tanami Desert. For Ngalia Warlpiri people – who refer to themselves as *Yapa* – there are many important connections between Mala and the Newhaven region.

The central deserts of Australia are the homeland of the Mala which lived for thousands of years in this arid region foraging on the sandplains and sheltering in the deep, long unburnt spinifex – a part of the rich landscape in which they lived side by side with *Yapa*. For these people, the Mala is not just a resource but a ceremonially significant animal. A story from the *Jukurrpa* (Dreaming) based around the travels of a group of ancestral Mala originates at a site named *Mawurrungu* on the boundary of Newhaven and the *Yunkanjini* Land Trust. From this site two groups of ancestors started their journeys, one travelling north through Newhaven into the woodlands of the Victoria River region, the other travelling south to Uluru. The Mala *Jukurrpa* travels nearly 1,000 km passing through *Warlpiri*, *Luritja* and *Pitjantjatjara* country. To Traditional Owners along the entire length of this *Jukurrpa*, *Mawurrungu* represents the point of origin of the Mala. For *Yapa* the return of Mala to Newhaven strongly represents the Mala coming home.

In a contemporary parallel, the last wild populations of Mala lived in the Tanami Desert not far north of Newhaven. In the 1970's and 1980's Warlpiri people worked closely with the Northern Territory Conservation Commission in an effort to protect these populations. When it was decided that the combined threat of cats, foxes and wildfire was too great, a few of the remaining Mala were caught and relocated to safe predator free-areas in distant places, including AWC's Scotia Wildlife Sanctuary. It is the descendants of some of these animals that will now be making the journey back home to the southern Tanami.



AWC's Mala population at Scotia will return home to Newhaven



Indicative location of proposed feral predator-free area at Newhaven

Key facts: the need for a national network of feral cat-free areas

- Australia has the worst mammal extinction rate in the world. 30% of our surviving mammals (excluding bats) are threatened with extinction. Feral cats kill tens of millions of native animals every night and are the greatest threat to our mammals.
- The need for additional feral cat-free areas is recognised by the Australian Government in its Threatened Species Strategy and in the Mammal Action Plan (Woinarski et al. 2014).
- Several of Australia's most endangered mammals survive only in feral predator-free areas: these species would be extinct except for fenced areas and offshore islands. Many other threatened species cling to survival outside feral predator-free areas but in densities much lower than natural levels.
- There is currently no silver bullet enabling the effective landscape-scale control of feral cats. Until we find a silver bullet – if we find it – conservation fences will be the difference between survival and extinction for a suite of Australia's threatened mammals.



Christine Ellis and Rachael Paltridge examine the stomach contents of a feral cat *J Schofield*



The Golden Bandicoot is nationally threatened and extinct in central Australia. Newhaven will host an estimated population of more than 32,000 bandicoots *R Knowles*



Western Quoll *Lochman Transparencies*

Please help implement the world's largest feral cat eradication project... and restore the lost mammals of central Australia

The return on your tax deductible Newhaven investment will be exceptional:

- A gift of \$250 will clear 2 hectares of feral cats – forever.
- A gift of \$1,000 will increase the Golden Bandicoot population by more than 40 animals.
- A gift of \$5,000 will increase the Mala population by more than 120 animals.
- A gift of \$10,000 will increase the Black-footed Rock-wallaby population by more than 20 animals.

With your support, AWC will implement the planet's largest feral cat eradication project and help our threatened mammals once again reclaim a massive landscape in the heart of central Australia. The estimated population statistics highlight the sheer scale of what will be achieved at Newhaven. However, there is more to this project than the unprecedented increase in endangered mammal populations. The return of digging mammals such as the Bilby and the Brush-tailed Bettong, and native carnivores such as the Western Quoll, will re-establish ecosystem processes that stalled many decades ago in central Australia. Species will be saved and a landscape in our red centre will be restored in a powerful demonstration of how practical, science-based action can halt the loss of Australia's wildlife.

Stage 1 of the Newhaven project will involve the establishment of a feral predator-free area of 8,000 – 15,000 hectares by the end of 2017. The conservation fence around Stage 1 will extend for approximately 50 kilometres. AWC estimates the total cost of Stage 1, including fence construction, infrastructure development and feral animal eradication, will be \$3 million. Stage 2 is estimated to cost an additional \$5 million.

The Australian Government has announced it will make an initial investment of \$750,000. AWC must therefore raise an additional **\$2.25 million** for Stage 1.

Please help by making a tax deductible donation on the enclosed form or at our website: www.australianwildlife.org

Historic return of endangered Woylies to Mt Gibson



AWC ecologist releases a Woylie in its new home at Mt Gibson *E Young*



AWC ecologists fit a radio-collar to a Woylie at Karakamia before it is transported to Mt Gibson *P Tucak*

The historic return of the Woylie to Mt Gibson represents a significant milestone in AWC's program to halt and reverse the decline in Australia's threatened mammal fauna. The reintroduction program at Mt Gibson, supported by an important new science facility – the Neville Tichbon Field Research Station – means Mt Gibson will play a critical role in the conservation of Australia's endangered mammals.

AWC field ecologists took a ground-breaking step in the battle to save Australia's endangered mammals in September, when 50 critically endangered Woylies were released into a feral predator-free area at Mt Gibson Wildlife Sanctuary. Two months after the release, all 25 of the radio-collared Woylies are still alive. This is a great result given the high level of risk attached to any translocation of such a highly endangered mammal. It reflects careful planning and coordination by AWC operations and science staff, along with our partners in the WA Department of Parks and Wildlife.

The iconic Woylie is one of Australia's most endangered mammals. In the space of only 15 years, Woylie numbers have plummeted from over 200,000 animals to an estimated 18,000 animals. Far from being an exception, this decline is unfortunately symbolic of much of Australia's small-medium sized mammal fauna. These declines have been so severe across much of southern and central Australia that many landscapes have become marsupial ghost towns. Through projects such as Mt Gibson, AWC is demonstrating that our native mammals can be returned – our landscapes can be repopulated – if feral predators are removed.

At Mt Gibson, AWC has drawn a line in the sand by establishing the largest feral predator-free area on mainland Western Australia. The conservation fence at Mt Gibson stretches for 43 kilometres, protecting an area of 7,800 ha, which is roughly equivalent to the average size of a national park in New South Wales. The specially designed conservation fence is electrified, with an overhang to prevent cats from climbing over and an underskirt to prevent foxes from digging under it. All of the feral cats and foxes were removed from within this area following the fence's completion, and the months leading up to the Woylie reintroduction focused on meticulously confirming that the area was feral predator-free.

Within the area protected by the conservation fence lies a landscape of stunning diversity, with ecosystems ranging from beautiful Salmon Gum woodlands to acacia dunefields and rocky breakaway country. It is a landscape that – once free of cats and foxes – is perfect for small mammals such as the Woylie.

The 50 Woylies translocated to Mt Gibson were sourced from AWC's Karakamia Wildlife Sanctuary. The translocation process itself was painstaking. It started early in the evening



AWC's 43 km feral-proof fence protects the largest feral predator-free area on mainland Western Australia. C Murty / The Australian

at Karakamia, where a team of AWC ecologists carefully caught and selected Woylies to start the new population at Mt Gibson: this involved a balance of male and female animals meeting relevant criteria (size, reproductive status). Processing of these individuals, including the fitting of radio-collars, kept the ecologists up late into the night. By mid-morning, the Woylies were loaded and on the road for the five hour drive to Mt Gibson. Upon arrival, the animals were checked again and any adjustments made to the radio-collars. Finally, 24 hours after their capture at Karakamia, the Woylies were released at designated locations within Mt Gibson. A quick glance around for orientation was typically followed by a mad dash into the darkness to search for cover, and food, in their new home.

AWC estimates the population of Woylies at Mt Gibson will grow to nearly 1,500 animals, representing an 8% increase in the global population of the species. The newly established Woylie population will soon be joined by a suite of other threatened mammals including the Numbat, the Banded Hare-wallaby and the Western Barred Bandicoot.

Stop press: Greater Stick-nest Rats the second species released at Mt Gibson

As this edition goes to print, Greater Stick-nest Rats have become the second threatened species to be released at Mt Gibson. Greater Stick-nest Rats are extinct wherever cats occur – the small number of surviving populations occur only on offshore islands or on the mainland in feral cat-free areas. Mt Gibson will be the largest area of cat-free habitat for this species. A total of 26 Stick-nest Rats have been released at Mt Gibson, including 10 individuals which were airlifted from the Alice Springs Desert Park. *Special thanks to Perth Zoo, who have provided support for the Greater Stick-nest Rat program at Mt Gibson.*

Thank you to Lotterywest for its significant support of the Mt Gibson Project



Neville Tichbon Field Research Station

On Friday 4 September, to coincide with the historic release of Woylies, the Hon Malcolm McCusker (AWC Director) opened the Neville Tichbon Field Research Station at Mt Gibson. Named in memory of Neville Tichbon – who, along with his brother, Michael, had a longstanding commitment to conservation in southwestern Australia – the Field Station will provide a substantial boost to AWC's science and operational capacity at Mt Gibson. Incorporating a research lab, an animal handling facility for supporting translocations and modern office space, the Neville Tichbon Field Research Station is set to play an important role in addressing a suite of high profile conservation challenges. These include:

- Quantifying the benefits of fenced areas for biodiversity including reptiles, birds and vegetation.
- Developing strategies for reducing the impact of feral cats in unfenced environments.
- Documenting and conserving the extraordinary floristic diversity of Mt Gibson (among the first external research agency to use the facility has been the WA Herbarium).



AWC ecologists in the Neville Tichbon Field Research Station F Lewis

Securing the Northern Quoll



Northern Quoll photographed during an AWC survey *A Harsthorne*



Taste aversion training using "toad sausages" will be used to teach quolls to avoid cane toads *K Tuft*

The Northern Quoll is a nationally endangered species which has declined steeply across much of its range. At Mornington, in the central Kimberley, Australian Wildlife Conservancy protects a genetically distinct population of quolls. Special measures are being put in place by AWC land managers and ecologists to protect this important population from wildfires, feral cats and feral herbivores as well as the impending threat from cane toads.

The Northern Quoll – one of four species of quoll in Australia – is a small-medium sized carnivorous marsupial. Its distribution once extended almost continuously across northern Australia from the Pilbara and the Kimberley to eastern Queensland. However, the population and range of the Northern Quoll has contracted significantly in recent decades and it is now listed as nationally endangered. This decline was driven initially by the impact of altered fire regimes and feral herbivores on the quoll's habitat. More recently, the arrival of cane toads has caused severe additional declines (quolls die when they eat the poisonous toads). The range of the quoll in Queensland and the Northern Territory, where toads occur, is now highly fragmented and residual, although there is some evidence that subpopulations in Queensland that survived the arrival of cane toads have stabilised (such as the quoll population at AWC's Brooklyn Wildlife Sanctuary).

The importance of the Mornington Quolls

Mornington protects an isolated population of Northern Quolls which is confined to a remote area of only 70,000 hectares characterized by rugged sandstone country dissected by deep gorges and gullies. The nearest population of quolls is over 120 kilometres to the west along the King Leopold Ranges. Work by AWC's science team – particularly PhD student Rosie Hohnen - has demonstrated that the Mornington quolls are genetically distinct from quolls in the north and west Kimberley (such as the quolls at AWC's Charmley River-Artesian Range sanctuary). Conservation of the Mornington quolls is therefore vitally important in maintaining the genetic diversity of the species.

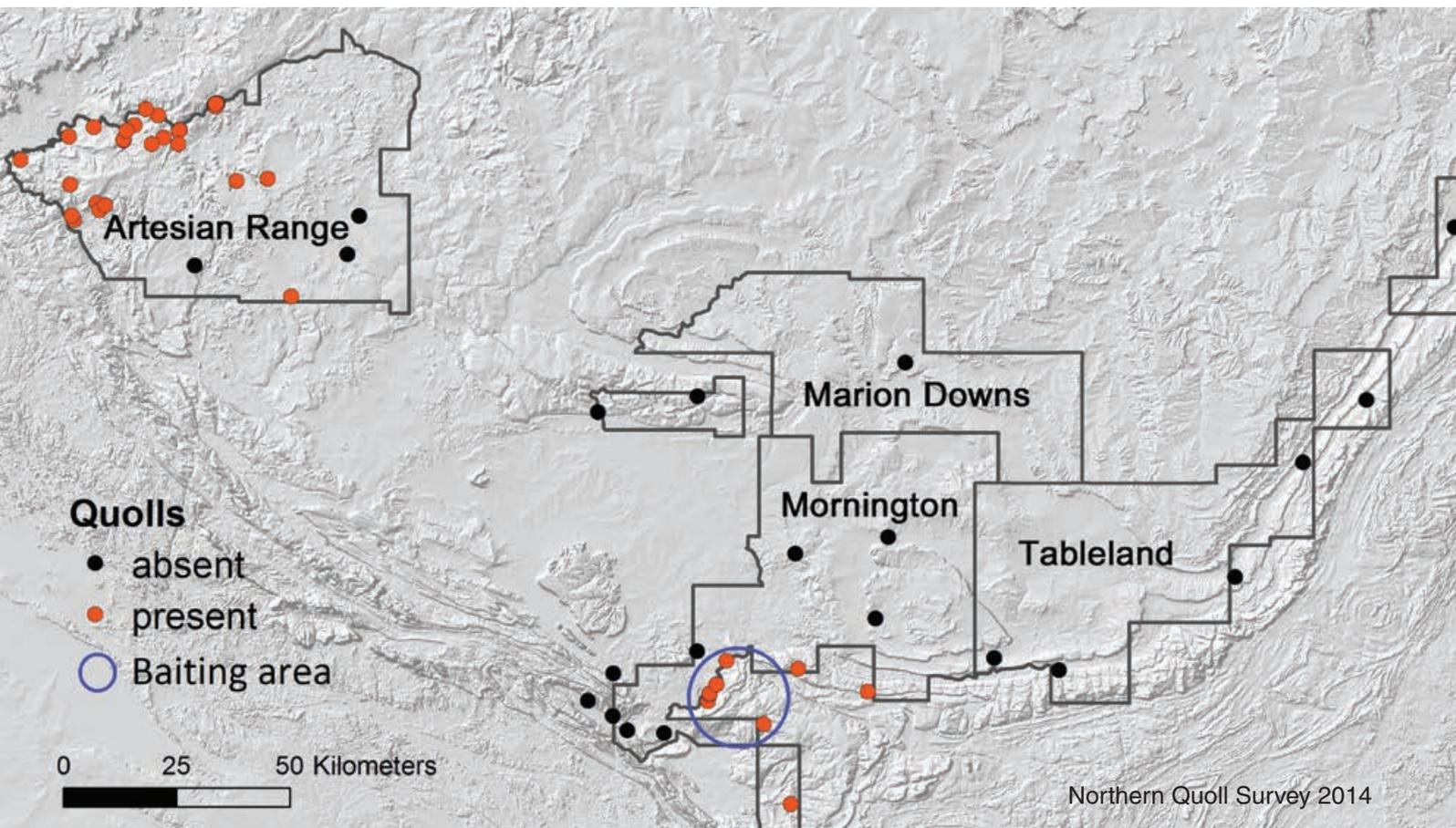
Protecting Mornington's special quolls – success to date

AWC field ecologists have been surveying quoll populations on Mornington since 2006, enabling the distribution of subpopulations to be mapped. In 2014, 25 sites across Mornington, Marion Downs and Tableland were surveyed with camera traps, with quolls confirmed at nine sites (see map).

Detailed monitoring of a micro-chipped population at Sir John Gorge has been carried out for the last four years. These quolls are trapped three times a year: during the breeding season, when the females have small pouch young, and at the end of the wet when the young are weaned and independent. This has generated important information about this population including the size of the population and its breeding behaviour. The good news is that the eastern population at Sir John has increased, while the western population is stable (see the graph on the next page, noting that annual fluctuations are due to the fact that almost all male quolls die after one year, once mating is complete).

Our success to date in protecting the Mornington quolls is based on:

- Effective fire management including small scale management to maintain long unburnt vegetation adjacent to Sir John Gorge.
- The removal of feral herbivores from the 70,000 hectare area occupied by the quolls.
- Limiting the impact of feral cats by maintaining protective ground cover (through fire management and feral herbivore control) and targeting any individual cats that learn to hunt quolls.



An innovative response to the arrival of cane toads

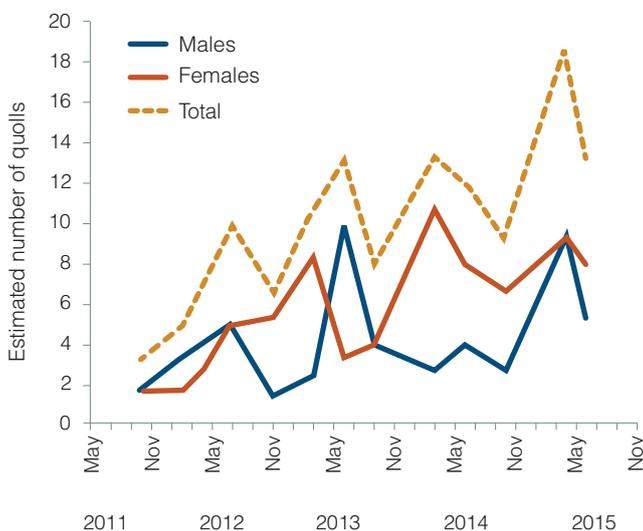
Cane toads are expected to arrive at Mornington during the 2015/16 wet season, posing a potentially severe additional threat to our special quoll population. To address this threat, AWC has teamed up with Dr Jonathon Webb's team at the University of Technology (Sydney) to put in place a bold and innovative plan to reduce the impact of toads.

Dr Webb's team has developed a method which is effective at training captive quolls to avoid cane toads by giving them food which contains a sub-lethal dose of cane toad poison. The captive quolls get sick, but recover and thereafter avoid eating cane toad.

For the first time, this strategy will be extended to deploy taste aversion baits across a wild quoll population. Non-toxic toad meat mince (from toad legs) and toad metamorphs (non-lethal) will be combined into sausages with a nausea-inducing compound (Thiabendazole). Hundreds of these will be dropped from helicopters over quoll populations on Mornington before the arrival of cane toads, with the first baits to be dropped in November 2015.

The trials we have conducted to date give us some confidence that the Mornington quolls will take the toad sausage bait, will get sick and, as a result, will avoid eating the real cane toads when they arrive. We will monitor the success of this strategy – and the survival of our quolls – by radio-tracking individuals at Sir John Gorge as the toad front passes. If this strategy is successful, the method can then be deployed to protect quoll populations further west in the Kimberley, including Artesian Range-Charnley River, and in the Pilbara.

Sir John Gorge, eastern population



You can be part of this ground-breaking science project ...

Would you like to help save the Mornington Northern Quolls by dropping cane toad sausage baits as you fly in a helicopter along Sir John Gorge (one of the most spectacular landscapes in Australia)?

AWC is looking for a donor who wishes to make a **tax deductible contribution of \$10,000** to cover the cost of the February/March 2016 helicopter baiting run, with you (or a nominee) also acting as a volunteer to help drop the baits (this could be a great Christmas present).

Please contact Shauna Chadlowe for more information: shauna.chadlowe@australianwildlife.org or 0414 879 864

Piccaninny Plains bird surveys to unlock wet season secrets of Cape York



Magpie Geese flying over Green Swamp at Piccaninny Plains T Laman

For much of the last 250,000 years, Cape York Peninsula has been connected to New Guinea. As a result, Piccaninny Plains is home to a rich diversity of wildlife strongly influenced by the repeated interchange of fauna with New Guinea. As part of our program to track the ecological health of Piccaninny Plains, AWC has commenced a biological survey program targeting birdlife on the nationally significant wetlands of the Archer River floodplain and the gallery forests of the Wenlock River.

For the avid bird watcher, Cape York provides opportunities that occur nowhere else in Australia. The northern portion of Cape York is strongly influenced by the avifauna of New Guinea and numerous species migrate across Torres Strait. These include forest species that move between the lowland forests of southern New Guinea and those on the east coast of Cape York and wetland species that move between the wetlands of the west coast of Cape York and the Trans Fly region of New Guinea. Bird movement and migration in the region is little studied and poorly understood, not least because of the difficulties of access in the wet season when migrants occur and many resident species breed. To date, there have been no wet season surveys of birds on Piccaninny Plains to quantify the concentrations of breeding wetland birds or identify notable occurrences of migrant and/or New Guinean species. There is an expectation that such surveys may reveal previously unrecorded Palearctic migrants (waterfowl and shorebirds), as well as species that disperse across the archipelagos to our north at that time of year (e.g. raptors, kingfishers).

A recently concluded survey was late enough in the year for new records of Palearctic migrants to be recorded. These were **Marsh Sandpiper** and **Wood Sandpiper**. These species breed on the tundra in the Russian Far East and winter in Australia from early September through to April. Other new records included **Square-tailed Kite**, **Red-kneed Dotterel**, **Whiskered Tern**, **Rufous Songlark**, **Red-headed Honeyeater**, **White-eared Monarch** and **Black-faced Monarch**. In total 145 species were recorded, including numerous **Palm Cockatoo** on both the Archer and Wenlock Rivers, the **Pied Imperial Pigeon** that migrates annually from New Guinea, and the **Yellow-Billed Kingfisher** that is confined to the northern tip of Cape York and occurs nowhere else on the AWC estate.

The team also conducted a count of birds on Green Swamp and other wetlands. The maximum abundance found on Green Swamp over three days of counts was ~4,500 birds, predominantly **Magpie Geese**, **Royal Spoonbill**, **Plumed Whistling-duck**, **Intermediate Egret** and **Great Egret**.

The survey team will return in March 2016 for the first wet season survey of waterbirds, using a helicopter to access Green Swamp and the gallery forests of both the Archer and Wenlock Rivers. It will be a significant step in revealing new information about the role of Piccaninny Plains in bird migration and dispersal.



Palm Cockatoo at Piccaninny Plains A Emmott

Ground-breaking feral cat research extended to Cape York



AWC field staff killed this cat after it took a native Water Rat at Piccaninny Plains *A Hartshorne*



AWC ecologist radio-tracking feral cats that have been collared *A Hartshorne*

Australian Wildlife Conservancy is implementing the most significant feral cat research program in Australia. The first phase of this research was carried out in the Kimberley where nearly 50 cats have been radio-collared. During 2015, our research has been expanded to Cape York.

Across Australia, feral cats kill tens of millions of native animals every night. Unfortunately, despite the scale of this threat, there is no effective strategy for removing feral cats from large open landscapes. Targeted scientific research has a critical role to play in defining strategies that will limit the impact of cats.

In 2015, AWC has expanded key components of our feral cat research to Piccaninny Plains on Cape York Peninsula. Cape York represents a frontier of sorts, where no detailed cat research has ever been conducted. Compared to Mornington (in the Kimberley), Piccaninny Plains has higher rainfall, more substantial wetland systems, hotter fires and a larger suite of animals threatened by cats. Understanding whether - and how - feral cats behave differently in this environment will help us further refine our feral cat management.

To catch and collar feral cats at Piccaninny Plains, we enlisted AWC's top cat-hunting dogs, Sally (the veteran) and Mullega (the rookie). In June this year, AWC field staff spotlighted for cats every night for three weeks. It was Mullega's first experience with cat hunting: she made a slow start but, after watching Sally conduct numerous chases, she had a light-bulb moment and it all seemed to click. Mullega successfully pulled off long and complicated hunts that Sally could only dream of achieving. Mullega became our champion cat-dog overnight!

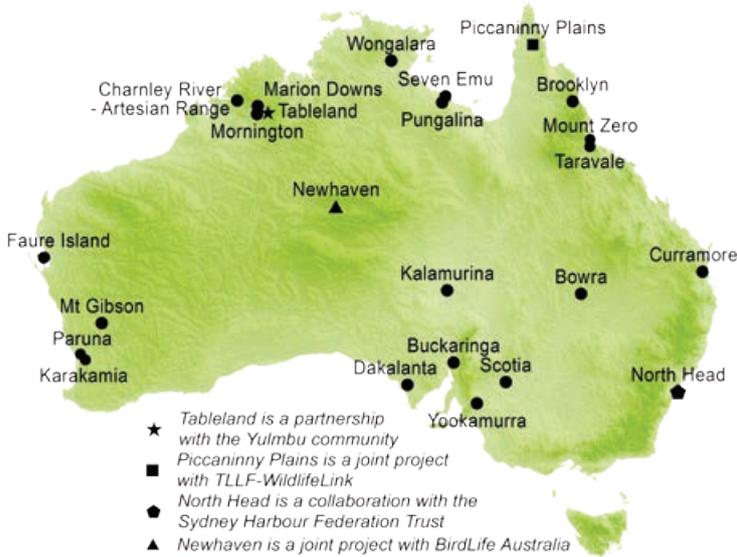
We were able to radio-collar 17 feral cats at Piccaninny Plains. The dogs would chase a cat up a tree where it would be darted and fall asleep, before being fitted with a GPS collar and released. Over the following four months, we have tracked these cats (sometimes in a helicopter) and made detailed maps of their habitats. We now have movement data from 11 cats, and will collect the data from the remaining 6 cats in November.

Already, the data promises to tell an interesting story about feral cat behaviour on Cape York. Many male cats are making long-distance treks to hunt at intense fire scars. One cat travelled 6 kilometres outside of its home-range to a fire only a few hours after it was lit. Another relocated his home range to the centre of an intense fire scar 8 kilometres away, while a third cat was captured at a fire scar, travelled 10 kilometres to another fire scar, then travelled another 8 kilometres beyond that to yet another fire scar.

As we collect and analyse all of the data, watch out for a further update on the differences between cat behaviour on Cape York and in the Kimberley. This research is part of an integrated AWC program which includes measuring cat densities, analysing cat diet, and examining the relationship between cats, feral herbivores and fire as well as the role of other predators (dingoes and foxes).



AWC ecologists catch a feral cat that has been sedated *A Hartshorne*



Newhaven: Return of the Mala

- Please direct my donation to the planet's largest feral cat eradication project. For example:
 - A gift of \$250 will clear 2 hectares of feral cats – forever.
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 - A gift of \$5,000 will increase the Mala population by more than 120 animals.
 - A gift of \$10,000 will increase the Black-footed Rock-wallaby population by more than 20 animals.

AWC operations generally

- Please direct my donation to AWC operations generally.

To donate online at our website please visit www.australianwildlife.org

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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 summarising your entire year's gifts for tax purposes.

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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.
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