

# wildlife matters

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*Expanding  
the conservation  
landscape*

 Australian  
Wildlife  
Conservancy

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The late Steven Christopher Kolb bequeathed a \$1.14 million legacy gift to AWC, and we are greatly honoured by his incredible generosity.

Rest in Peace, Steven. Your personal legacy of friendship, enterprise and knowledge lives on in those who knew you. Your legacy gift to AWC means that your incredible generosity will have a lasting, positive impact on Australia's threatened wildlife and habitats.

Cover image:

An aerial view of a ridge rising out of the landscape at Ngalurrju Aboriginal Land Trust in Central Australia. *Brad Leue/AWC*

For references see online articles  
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Australian Wildlife Conservancy (AWC) is a global leader in conservation, providing hope for Australia's wildlife with a science-informed, land management partnership model that delivers high impact results.

The mission of AWC is the effective conservation of all Australian animal species and the habitats in which they live.

To achieve this mission our actions are focused on:

- Establishing a network of sanctuaries which protect threatened wildlife and ecosystems. AWC now owns, manages or works in partnership to deliver and influence conservation across more than 12.9 million hectares (31.9 million acres).
- Implementing practical, on-ground conservation programs to protect wildlife. These programs include feral animal control, fire management, weed eradication and the translocation of threatened species.
- Conducting (either alone or in collaboration with other organisations) scientific research that will help address the key threats to native wildlife.
- Hosting visitor programs at our sanctuaries for the purposes of education and promoting awareness about the plight of Australia's wildlife.

AWC is an independent, not-for-profit organisation with its head office in Perth, Western Australia. Donations to AWC are tax deductible.

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## ***CEO MESSAGE***

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Biodiversity is intrinsically valuable, central to ecosystem function, the health of the environment, and human wellbeing and economy. Accordingly, it is in our interest to protect, research and restore wildlife and habitats, and also our responsibility. The State of the Environment (SoE) Report concluded that the country's environments are under increasing pressure and species and ecosystems are in decline. In the face of this, Australia's current investment in biodiversity conservation is inadequate. Australia is biologically megadiverse, but one of the lowest ranking developed nations when it comes to protecting diversity. There is an urgent need for governments to support and facilitate effective private conservation and public-private partnership, and for new laws that encourage and incentivise the delivery of better outcomes for biodiversity.

Australian Wildlife Conservancy's (AWC) mission is centred on taking effective action to halt biodiversity loss and restore our ecosystems. I was proud to see AWC recognised as a bright spot in the otherwise bleak SoE Report, cited for our investment in feral predator-free safe havens, approach to practical management of ecosystems, and commitment to working alongside Traditional Owners and Indigenous ranger groups to improve conservation outcomes. The biodiversity crisis is a global problem, and we must continue to innovate, to radically scale up and take strategic action to solve it.

For deep-rooted change to occur, the entire community must truly value the natural world and understand what is at risk. Only then will politicians respond. AWC's vision is for a world where Australia's biodiversity is valued and effectively conserved by an engaged community, and education is key to achieving this. AWC is investing in long-term outcomes through our conservation and ecology internships, school education program and broad communication. As supporters, the stories you choose to share with your friends and networks further this end and I thank you for it. The benefits of mutual learning are also demonstrated in other aspects of AWC's work, such as recent surveys undertaken by Wilinggin and Dambimangari Women Rangers and AWC ecologists in the Kimberley,

Western Australia. These surveys not only yielded a deeper understanding of an Endangered species but involved knowledge exchange, shared learning and working together.

AWC continues to expand the conservation landscape and scale up our efforts to meet the critical challenges of protecting Australia's unique biodiversity. In this edition of *Wildlife Matters*, I am very proud to share details on AWC's newest sanctuary. Located just north of Sydney, New South Wales, the as-yet unnamed sanctuary is home to many forest-dwelling species not currently found within AWC's network. The new sanctuary is located in an area of regional Koala significance and could provide a major contribution towards the conservation of this Endangered species. I look forward to sharing more as we get boots on the ground.

New infrastructure is in the works at Charnley River–Artesian Range Wildlife Sanctuary, a strategic centre for AWC's conservation efforts in the Kimberley. This important development will boost capacity for hard-working field staff and ultimately see the establishment of the world-class Kimberley Conservation Hub – a research centre with increased training facilities, furthering our ability for collaboration and the delivery of effective conservation.

After years of planning and more than a decade of effective land management, AWC's newest fence project has begun at Mount Zero–Taravale Wildlife Sanctuary in Queensland. This complex feral predator-proof fence is the first of its kind in northern Australia and will play a critical role in the future of the Endangered Northern Bettong.

The work the AWC team is carrying out is critical for Australia's biodiversity and provides a beacon of hope for the broader community. The recent translocation of Critically Endangered Central Rock-rats to Newhaven Wildlife Sanctuary in Central Australia is probably the proudest moment of my professional life. The project is a demonstration of AWC at its best: years of planning, preparation, construction, implementation, engaging stakeholders, collaborating, undertaking the harvest in inhospitable terrain, and achieving the reintroduction, for a species on the brink. It's deeply moving.

**Together, we are making a difference.** In the face of extreme conservation challenges, we can continue to educate, to scale up our efforts and restore Australia's biodiversity for future generations. On behalf of the team, thank you and best wishes for the festive season.

Tim Allard

Chief Executive

PS: If you are looking for a meaningful gift this Christmas – one that will expand the country's conservation landscape – please consider an online donation to AWC. You can send a personalised eGift card via our website.



The lush, welcoming landscape of AWC's newest sanctuary, home to many forest-dwelling species not currently found within AWC's network of sanctuaries and partnership areas. *Brad Leue/AWC*



## ***New sanctuary for New South Wales***

***DR GREG HOLLAND, REGIONAL ECOLOGIST  
ALED HOGGETT, REGIONAL OPERATIONS MANAGER  
DR HANNAH SHEPPARD BRENNAND, SCIENCE WRITER***



***The forest canopy, a distant shadow above, echoes with whispers of movement, growls and grunts. The thud of a glider as it moves from tree to tree. Impossibly clear water trickles underfoot and the scent of leaf litter floats in the air, joining the symphonic croaks and whistles of frogs. Log bridges negotiate a myriad of creek crossings in this lush and welcoming landscape. The terrain is folded like a crumpled piece of paper – always steeply up or downhill.***

AWC's newest wildlife sanctuary, situated less than three hours north of Sydney in New South Wales, is an almost 4,000-hectare wonder of topographically complex ridges and ranges, with dry sclerophyll forests at the peaks, shifting to dense, wet rainforest in the deeper gullies. Numerous mountain streams wind channels across the landscape.

The brand-new sanctuary – part of a conservation agreement with philanthropists and long-time AWC supporters Andrew and Jane Clifford to manage a private estate – is located on the Traditional Lands of the Worimi Nation, home to 18 different clan groups. As this edition of Wildlife Matters goes to print the sanctuary remains unnamed, as AWC is seeking to consult with the Local Aboriginal Land Council on an appropriate name. Importantly, this sanctuary will protect high quality forest habitat for the Endangered Koala. In New South Wales, Koalas are thought to have suffered a major decline in recent years due to drought and wildfire. The sanctuary is located in an area recognised by the NSW Government as being of regional Koala significance and is expected to provide a major contribution towards the conservation of this iconic Australian species.

Vegetation on the sanctuary is diverse. The dry sclerophyll forest community is comprised of Spotted Gum, Grey Ironbark, Grey Gum, White Mahogany, Tallowwood, Sydney Blue Gum, Forest Oak and Turpentine. The wet sclerophyll forest community is dominated by Sydney Blue Gum, Tallowwood and Brush Box, with significant representation by various rainforest tree species including Bangalow Palms with their feather-shaped leaves. The sanctuary is surrounded on three sides by significant natural forest and shares a boundary with Ghin-Doo-Ee National Park and Myall River State Forest, making it an important forested corridor for wildlife.

The sanctuary provides vital habitat for many forest-dwelling species that do not currently occur within AWC's network of sanctuaries and partnership areas, and there are opportunities to protect and enhance the populations of many species, including the Endangered Koala. The dense understorey vegetation will likely hide a suite of small native mammals that call this place home.

AWC scientists have used the results from previous ecological surveys, historical records and publicly available data to estimate that the new sanctuary likely supports more than 100 vertebrate species – of which 12 are listed as threatened – and more than 200 plant species. Threatened animals include the Yellow-bellied Glider, the rainforest-roosting Golden-tipped Bat, the casuarina-eating Glossy Black-Cockatoo and the Green-thighed Frog, an amphibian that can only be heard calling a few nights of the year after heavy rain. A detailed survey of the sanctuary's plants and animals was undertaken by State Forests of NSW in 2002. AWC staff and contractors have already encountered Short-eared Brushtail Possums, Greater Gliders, Red-necked Wallabies, Goannas, Diamond Pythons and Paradise Riflebirds.

As a new sanctuary, AWC will develop a sanctuary-specific science and conservation land management program over the coming months. There are two known Weeds of National Significance present that will be a focus of management programs: lantana and blackberry. Of benefit to AWC's conservation efforts, intense wildfires have been very infrequent in the landscape and the grassy condition of the dry sclerophyll forest on the upper slopes of the property has been maintained by regular (~2 to 5 years) fuel-reduction burning and light cattle grazing in these areas.

The management of AWC's newest sanctuary will see the organisation's footprint in New South Wales increase to more than 162,000 hectares – adding to Scotia Wildlife Sanctuary, Mallee Cliffs National Park and the Pilliga Project Area where AWC works in partnership with the NSW Government, and North Head Sanctuary where AWC works in partnership with the Sydney Harbour Trust. Generous AWC supporter Richard Harding has committed \$500,000 to underpin the first year of management and conservation at the sanctuary. We greatly appreciate his backing, the generosity of the Cliffords, and that of all of our incredible supporters. AWC invites you to join us in tackling the exciting new challenges that come with a new sanctuary.

***We need your help***

Your gift will support a sanctuary-specific conservation science and land management program





[Top] A Sugar Glider forages in the forest canopy at AWC's new sanctuary. *Brad Leue/AWC*

[Bottom] The tell-tale chevron-shaped feeding mark of a Yellow-bellied Glider, photographed at the new sanctuary. *Brad Leue/AWC*



[Top] Short-eared Brushtail Possums are common in wet forest, including at AWC's new sanctuary, and can often be found feeding on ground plants. *Brad Leue/AWC*  
[Bottom] The golden-eyed Giant Barred Frog. The species is in decline due to habitat loss. *Brad Leue/AWC*  
[Opposite page] AWC's new sanctuary is situated in prime habitat for the iconic and Endangered Koala. *Wayne Lawler/AWC*

### *Koala*

*Phascolarctos cinereus*



The arboreal Koala is one of nature's oddities. These solitary specialists subsist on a diet of eucalyptus foliage – leaves that contain enough toxins to kill most other animals. Koalas have slow metabolic rates, sleeping 18 to 22 hours each day to conserve energy. Breeding is seasonal and the males' bellowing territorial calls can be heard reverberating through the treetops particularly from October to March.

The Koala's closest living relative is the wombat. Like wombats, Koalas have backward-facing pouches and hard bottoms. Wombats use their hard rumps for defence, but Koalas use them to remain comfortably wedged in tree forks for long periods of time.

In southern Australia, Koalas are most abundant in lowland sclerophyll forest and woodland, with inland distribution limited by rainfall, temperature and leaf moisture content. Koala populations are patchily distributed along Australia's east and south coasts and hinterlands, from the Eyre Peninsula in South Australia to north-eastern Queensland with some translocations beyond the species' pre-European range (for example, Kangaroo Island).

In December 2021, the conservation status of the Koala (NSW, ACT and QLD combined populations) was changed from Vulnerable to Endangered, a more serious conservation status reflecting the species' increasing extinction risk.

Interacting threats propelling the Koala population towards extinction include habitat loss and fragmentation, inappropriate fire regimes, climate change impacts, disease, and feral dogs and cats. Many of the populations in New South Wales and Queensland are now in decline. The 2019–2020 catastrophic bushfires are estimated to have burned 9% of habitat (in NSW, ACT and QLD) where the Koala is known or likely to occur, ranging from <1% in drier inland areas to 30% in temperate coastal forests (DAWE 2022, National Recovery Plan for the Koala).

Protecting the Koala requires protection of Koala habitat (particularly from major threats like land clearing and intense wildfire). AWC's new sanctuary is located in an area of regional Koala significance and there are exciting opportunities to survey, protect and enhance populations of the Endangered species and many other forest-dwelling animals and plants.

**Support inventory surveys at  
AWC's new sanctuary**

With your help, we can get  
boots on the ground and  
establish the presence of Koalas





Charnley River–Artesian Range Wildlife Sanctuary is situated on the Traditional Lands of the Ngarinyin People in the Kimberley, Western Australia. The sanctuary is a strategic centre for AWC’s conservation efforts in this important region. *Wayne Lawler/AWC*



## ***Building a world-class conservation centre in the Kimberley***

***JOHN MASSINGHAM, OPERATIONS MANAGER  
DR TOM SAYERS, WILDLIFE ECOLOGIST  
TOBY TRESIDDER, GRANTS COORDINATOR***

Covering 300,000 hectares of the Kimberley, Charnley River–Artesian Range Wildlife Sanctuary is situated on the Traditional Lands of the Ngarinyin People. Charnley protects a diverse array of habitats and the sandstone ranges, rainforest valleys and savanna woodlands are home to many threatened species and species found nowhere else in Australia. Despite declines elsewhere, threatened mammals such as Widjingerri (Northern Quolls), Golden Bandicoots, and Warrmuna (Northern Brushtail Possums) persist in the region, and areas such as the Artesian Range continue to provide refuge for a suite of endemics including tiny Yaali (Monjons), elusive Black Grasswrens, and feisty Rough-scaled Pythons. Importantly, the sanctuary is located in the only part of mainland Australia to have had no mammal extinctions. AWC's extensive Ecohealth program monitors these species, in turn informing the organisation's science and conservation land management activities. Charnley also serves as the hub for AWC's north-west fire management program, delivering a dramatic reduction in the frequency and intensity of late dry season wildfires across 6.1 million hectares of the Kimberley.

Despite its remote location, Charnley is a strategic centre for AWC's conservation efforts. Situated on the Traditional Lands of the Ngarinyin People of the Wanjinna-Wunggurr Community, Charnley lies to the north-west of Mornington–Marion Downs Sanctuary and Tableland Partnership Area and is nestled between the Wilinggin and Dambimangari Partnership Areas and Yampi Sound Training Area. All-told, these lands represent a footprint of 4.3 million hectares on which AWC and our partners undertake scientific and conservation land management work. These efforts enhance conservation values and protect important habitat for threatened and endemic wildlife. These actions also support AWC's mission: to effectively conserve all Australian animal species and the habitats in which they live.

## ***Working in challenging conditions***

Currently Charnley's operations are housed in a 60-year-old homestead and campground, never intended to support such complex functions. The Kimberley's intense tropical monsoonal climate poses additional challenges. The facilities do not have extensive air conditioning and whilst temperatures are bearable during most of the dry season, once the oppressive heat and humidity of the late dry season arrives, staff have to use temporary air-conditioned rooms. The homestead's air-conditioned office is often transformed into a makeshift dormitory at night when extra people need to be accommodated. When the rains finally arrive in late December, much of the region floods, leaving helicopter and light aircraft as the only viable transportation options. These challenges reduce capacity for effective conservation, as staff aren't able to be on the ground undertaking key programs.

## ***The project: immediate infrastructure development***

Recognising Charnley's strategic importance and the importance of supporting hard-working and dedicated field staff, AWC is investing in upgrades to boost capacity to deliver conservation outcomes across the Kimberley and to raise accommodation standards. Work has begun on upgrading the site's aging water and septic systems. The site's electrical system is also getting attention thanks to a grant from Schneider Electric Pacific Foundation. A 69-kilowatt solar array has been installed with inverters, batteries (56 kilowatt-hours, with upgrade capacity to 140 kilowatt-hours), and backup generators to reduce the site's reliance on diesel and to power the next stage of Charnley's evolution.

## ***The project: a world-class Kimberley Conservation Hub***

One of the most exciting aspects of this evolution is the planned Kimberley Conservation Hub. AWC has worked closely with the Ngarinyin People to design a set of facilities to meet growing conservation efforts. Over the next three years, AWC aims to build research and office amenities, meeting and training spaces, housing, and visitor engagement infrastructure. The Kimberley Conservation Hub is expected to include:

- A field research centre with training and meeting facilities and a climate-controlled storage space for scientific equipment and samples.
- A workshop to house conservation land management operations.
- Eight new houses for permanent staff.
- New accommodation and facilities for Ngarinyin Traditional Owners and Wungurr Rangers.
- Five eco-tents for supporter events and visitors.
- A campground interpretive centre.
- Accommodation for seasonal staff around the homestead.

This expanded base of operations will allow AWC staff and our partners to spend more time on the sanctuary, provide greater opportunities for Traditional Owner collaboration, and give supporters more opportunities to see the impacts of their generosity first-hand. This significant project is partially funded but will require further support to reach its full potential to deliver positive outcomes for collaborative and effective conservation at scale.

Despite the site's current limitations, over the last seven years, AWC ecologists have compiled a comprehensive and growing ecological inventory and established baseline data on key species to enable the measurement of the sanctuary's overall ecological health. With much of the property accessible only by helicopter and most surveys requiring several nights of camping, staff are still learning about the abundance, diversity, and distribution of plants and animals found on the sanctuary.

One of the most direct threats to this diversity is wildfire. The intensity and scale of late dry season wildfires in the Kimberley and the resulting degradation of habitat is recognised as a major factor driving the decline of the region's threatened species. AWC and our partners deliver the north-west fire management program during the early dry season across 6.1 million hectares. During the late dry season, AWC staff and partners conduct a fire suppression program to further limit the extent of severe wildfires across 4.3 million hectares, with a focus on protecting high-value habitat. The program has delivered a decrease in the frequency and severity of devastating late dry season wildfires with significant, positive biodiversity outcomes.

AWC Regional Ecologist Dr Skye Cameron is excited about the benefits the Kimberley Conservation Hub will deliver: *'Having a central localised facility will only enhance and foster increased collaboration with partners and other stakeholders. With a central meeting point, training facility and research centre, we'll be able to launch some really exciting discovery programs and influence all sorts of conservation outcomes.'*

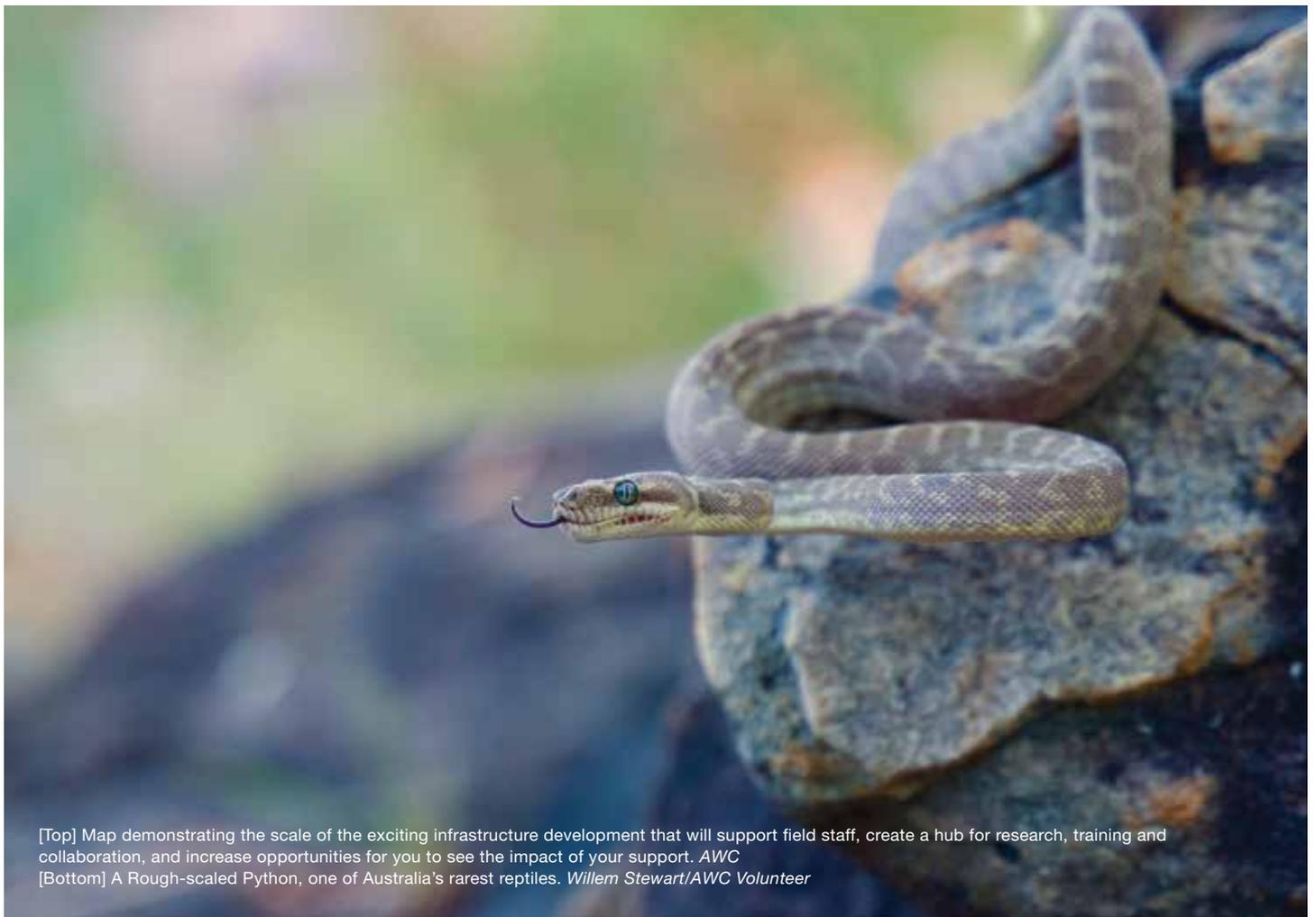
The facilities will also support further research collaborations with universities, not-for-profits, the WA Department of Biodiversity Conservation and Attractions, government partners, and community organisations. Access to a training area will strengthen fire management coordination with the North Kimberley Land Conservation District Committee and the Kimberley Land Council.

Strong partnerships and collaboration will be essential as AWC continues to build capacity to deliver conservation on a landscape scale across the Kimberley. Developing purpose-built facilities in the heart of the region is the next step in scaling up conservation efforts and outcomes.

### ***Show your support for field staff and conservation collaboration***

Your gift will help fund infrastructure development and the Kimberley Conservation Hub





[Top] Map demonstrating the scale of the exciting infrastructure development that will support field staff, create a hub for research, training and collaboration, and increase opportunities for you to see the impact of your support. AWC

[Bottom] A Rough-scaled Python, one of Australia's rarest reptiles. *Willem Stewart/AWC Volunteer*



A solar array has been installed at Charnley River–Artesian Range Wildlife Sanctuary to reduce the sanctuary's reliance on diesel and to power the next stage of development. *Joey Clarke/AWC*

## ***Kimberley Fire Program***



Recent decades have seen a transformation of fire management in the fire-prone savanna landscapes of northern Australia, with an intensification of the delivery of extensive prescribed burning in the early dry season (EDS) to prevent the frequency and extent of high-intensity wildfires under extreme fire weather conditions in the late dry season (LDS). Effective fire management is a primary focus of AWC's conservation land management operations, and is aimed at promoting biodiversity conservation, by: (1) reducing the extent of LDS wildfires; and (2) increasing the extent of unburnt vegetation, particularly long unburnt ( $\geq 3$  years) vegetation. In the Kimberley, AWC undertakes fire management at a landscape scale primarily via EDS prescribed burning on sanctuaries, in partnership with Traditional Owners on their lands (via representative Aboriginal Corporation governance) and on several neighbouring pastoral lease properties. Effective fire management at Charnley has seen a 62% reduction in the area burnt by LDS fire, compared with pre-AWC levels.

## ***Northern Quoll Conservation***



Northern Quolls are one of several threatened species AWC is working to conserve at Charnley. Northern Quolls have declined drastically across northern Australia, due to the invasion of poisonous cane toads (preyed upon by quolls), and exacerbated by introduced predators, wildfire regimes and other threats. Toads were first detected on Charnley in 2018 and have since infiltrated the entire sanctuary. A key component of the Charnley science program is quoll population monitoring. This includes camera arrays which assess quoll numbers in central Charnley, and the Artesian Range – a major stronghold for the Northern Quoll and a region for which AWC has comprehensive pre-toad baseline data. Local population declines have been detected in recent years, but as of 2022 quolls persist. It is important that AWC continues to assess the viability of remnant populations, with the data informing further interventions if required. This work forms part of AWC's Northern Quoll Conservation Management Plan, with Charnley playing a central role.

## ***Carnivorous Plant Research***



Curtin University PhD candidate and botanist, Thilo Krueger, and his academic co-supervisor Dr Andreas Fleischmann, are studying plant–insect interactions at Charnley. The project focuses on carnivorous plants and one of the specific research areas is the overlap between prey insects and pollinator insects. Australia is home to more carnivorous plants than anywhere else in the world and Charnley supports numerous different habitat types, many with a specific array of carnivorous plant species. These plants can be particularly abundant in spring-fed sandseep environments and, using this information, AWC Wildlife Ecologist Dr Tom Sayers found 'Sundew Spring' – a site hosting millions of sundews, including many undescribed species.



AWC Senior Field Ecologist Larissa Potter, Dambimangari Ranger Azarnia Malay and Ngarinyin Woman Cessa Bani set a camera trap. Larissa Potter/AWC

## ***Working together: Wilinggin and Dambimangari Women Rangers survey the elusive and Endangered Black-footed Tree-rat***

***DR KAREN YOUNG, WILDLIFE ECOLOGIST  
LARISSA POTTER, SENIOR FIELD ECOLOGIST***

Better known from the Northern Territory and north-east Queensland, the Black-footed Tree-rat (*Mesembriomys gouldii*) also occurs in the Kimberley region of Western Australia. Sightings are rare and the detection of a Black-footed Tree-rat by staff from the WA Department of Biodiversity, Conservation and Attractions on Wilinggin Country in 2017 was the first record of this species in the Kimberley for 30 years.

Excitingly in 2019, through the Wilinggin–AWC Partnership, camera surveys detected the Black-footed Tree-rat at another location in a valley on Wilinggin Country. To find out more about the abundance and habitat preferences of this species, both locations were resurveyed in 2021 with camera and live traps, but the species was only detected again at the original site.

Concurrently, the first record of the Black-footed Tree-rat was confirmed on Dambimangari Country when the species was caught on a camera during a Dambimangari–

AWC survey. The tree-rat was observed in the same valley not far from the second Wilinggin location.

Detections on Wilinggin and Dambimangari Country at opposite ends of this large valley sparked everyone's interest. Were animals moving through? Or is there a resident but elusive population spread along this remote valley?

These detections offered two unique opportunities, facilitated through the Wilinggin–AWC and Dambimangari–AWC Partnerships, to:

- Share the fieldwork to discover more about the distribution and habitat preferences of the Endangered Black-footed Tree-rat in the Kimberley.
- Learn from each other, where Wilinggin's newly formed Ngarinyin Women Rangers could work alongside the experienced women of the Dambimangari Ranger team.



*It began with detections of an Endangered species poorly known from the Kimberley. It grew into an opportunity for collaboration and three-way learning between Wilinggin and Dambimangari Women Rangers and AWC, all while developing a deeper understanding of the elusive and Endangered Black-footed Tree-rat.*



#### WAC–AWC Partnership

Wilinggin Aboriginal Corporation and AWC work collaboratively across 1.73 million hectares of Wilinggin Country in the north-west Kimberley. Ngarinyin Traditional Owners have a strong, active and ongoing connection to their Country and WAC runs the successful Wungurr Ranger program and Wilinggin Indigenous Protected Area.



#### DAC–AWC Partnership

Dambimangari Aboriginal Corporation and AWC work collaboratively across 800,000 hectares of Dambimangari Country on the Kimberley coast and 568,000 hectares at Yampi Sound Training Area on the Traditional Lands of the Dambimangari People. Dambimangari Traditional Owners have a strong, active and ongoing connection to their Country and protect an area rich in natural and cultural values.

*As guests on Country, AWC supports DAC and WAC's existing land management programs and helps to enhance the delivery of conservation science. Central to the success of these partnerships is the mutual and respectful exchange of culture and understanding.*

Wilinggin Country camera sites were identified from satellite imagery and scoped out via aerial reconnaissance with the involvement of WAC staff. For the Dambimangari sites, DAC–AWC Biodiversity Ranger Azarnia Malay – one of Dambimangari’s first female rangers – selected locations based on satellite imagery and mapping software, using skills she has been learning and practising over the last two years.

Home base was set as Bachsten Camp on Wilinggin Country, with all activities to be undertaken in mixed teams of women from WAC, DAC and AWC. The Wilinggin, Dambimangari and AWC teams convened at Ngallagunda (Gibb River) to make the long journey along the Jilariba track to Bachsten. The expedition began on well-graded dirt roads but these were soon left behind for a rough path winding over many water crossings, bogs, washouts and rocky jump-ups, following in the wake of Wilinggin’s Wunggurr Rangers who were opening the track ahead. Alas, the ‘slow road’ became ‘no road’ as the teams caught up to the Wunggurr Rangers – the early June rain had made sections of the track impassable. Poring over maps and complex logistical charts, a new plan was devised.

This saw everyone shift to AWC’s Charnley River–Artesian Range Wildlife Sanctuary for phase one of fieldwork, with three days spent by WAC–DAC–AWC women deploying cameras across the shared valley. Ngarinyin Women Risharni Macale, Cessa Bani, Travina Martin and Rona Charles (Wilinggin) took turns going out in the teams with Rangers Azarnia Malay and Cherylyn Ozies (Dambimangari) and AWC Senior Ecologists Karen Young (Wilinggin Partnership) and Larissa Potter (Dambimangari Partnership).

*‘Coming out and seeing different Country, it was good, and working together’* said Dambimangari Ranger Azarnia.

With many tasks required in setting cameras, everyone had a role and skills to teach, learn and practise, including site selection, setting up the cameras, assessing tree hollow availability and entering data. Once set, the camera traps were left deployed for a month.

Phase two of fieldwork saw the women shift operations to Bachsten Camp via helicopter. Three nights were spent camping out at two different sites with a mixed WAC–DAC–AWC team at each. The teams’ spotlighted, used thermal scopes and trapped for teaching purposes (always with the hope that one of the elusive tree-rats might turn up!). The Dambimangari and Wilinggin Women worked together in setting trap lines, with Dambimangari Rangers showing Ngarinyin Women how to use the GPS or offering advice on how to position traps. The thermal scopes were new to all, so it was a shared learning experience searching for the heat signals of animals.

Dambimangari Ranger Azarnia said of the experience, *‘I didn’t think I’d be here, I’ve been a ranger for four years and didn’t think I’d be teaching other girls.’*

There was much excitement when – on the first night! – one of the teams flushed a Black-footed Tree-rat out of long grass into a tree.

*‘I was thinking of the rats in town, not these big rats.... proper bush rats, much better!’* Ngarinyin Woman Cessa said of the sighting, with Dambimangari Ranger Azarnia adding *‘When I saw the Black-footed Tree-rat I was really excited.... I wasn’t expecting it to be so big.’*

*‘Just by looking at that animal [Black-footed Tree-rat], it gave me the motivation to do more,’* affirmed Wilinggin’s Cessa.

The following nights turned up Savanna Gliders, Red-backed Buttonquails, Golden-backed Tree-rats and bandicoots, but no more Black-footed Tree-rats. The live-trapping lines resulted in a few rock-rats and bandicoots – just enough for teaching and training purposes.

For Wilinggin’s Cessa this was *‘...my first experience seeing an animal in a trap... I never learnt about these animals in school, so learning on this trip, it really opened my mind.’*

Dambimangari Ranger Azarnia summed up the constantly changing plans and resulting field work beautifully, *‘skills, time, practise .... we are not quitters...it was good how we worked everything out in the end.’*

The camera trap results revealed the ‘shared Black-footed Tree-rat valley’ is aptly named! Throughout the valley cameras detected Black-footed Tree-rats at five sites, with three of these being new locations, adding to the small handful of known Black-footed Tree-rat locations in the Kimberley.

These detections, the data collected, the sharing of knowledge and working together is incredibly important. It is yielding a deeper understanding of Endangered Black-footed Tree-rat habitat preferences and distribution across the Native Title areas, enabling us all, through partnership, to better consider, monitor and protect the species’ habitat in the Kimberley. Working in the WAC–AWC Partnership and DAC–AWC Partnership on exciting projects such as this is also empowering women, such as Cessa, who summed up the benefit of her experience as *‘being a role model to our community.’*

## ***Black-footed Tree-rat***

*Mesembriomys gouldii*

One of Australia's largest native rodents, the Black-footed Tree-rat weighs almost a kilogram: so big that it competes with Brushtail Possums for tree hollows in which to roost in the eucalypt woodlands of the tropical north. These animals are agile climbers, steadying themselves on broad feet and using their long brush-tipped tail as a balance as they bound among the branches or forage on the ground. They eat mostly fruit (especially of *Pandanus* trees) and large seeds. Distributed in separate populations in the Kimberley, Top End and Far North Queensland, this species has declined severely in recent decades.



[Top] A juvenile Black-footed Tree-rat caught on a camera trap on Willingjin Country. AWC

[Bottom] Black-footed Tree-rats are one of Australia's largest rodents, weighing almost a kilogram. Pictured, a Black-footed Tree-rat perches atop a fallen *Pandanus* fruit in the Top End. Jean-Paul Ferrero/AUSCAPE





[Opposite page] Clockwise from top left: Working together – AWC Wildlife Ecologist Dr Karen Young, Ngarinyin Woman Cessa Bani and Dambimangari Ranger Azarnia Malay with a bandicoot. *Karen Young/AWC*. Dambimangari Ranger Azarnia measures a rock-rat (in the catch bag). *Karen Young/AWC*. Dambimangari Ranger Cheryln Ozzies uses a thermal scope to search for wildlife. *Larissa Potter/AWC*. Ngarinyin Woman Risharni Macale and Dambimangari Ranger Cheryln set a camera trap together. *Karen Young/AWC*. Ngarinyin Woman Risharni angles a camera trap using a rock. *Karen Young/AWC*.

[This page] Clockwise from top left: Ngarinyin Woman Travina Martin and Dambimangari Ranger Cheryln keep warm in the helicopter on a cold morning in the Kimberley. *Larissa Potter/AWC*. Ngarinyin Woman Travina sets a cage trap. *Larissa Potter/AWC*. Wilonggin Aboriginal Corporation staff, Wungurr Rangers and Dambimangari Rangers – from left to right, WAC Healthy Country Project Officer Rachel Treacy, Wungurr Rangers Robin Dann and Sherwon Nulgit, WAC Fire Manager Luke Russ, Traditional Owner John Rastas, Dambimangari Ranger Frank Martin and Wungurr casual Ranger Waylon Jungine discuss the impassable track. *Karen Young/AWC*. The camera deployment team: Ngarinyin Woman Cessa, Dambimangari Ranger Azarnia, Ngarinyin Woman Risharni, AWC Senior Field Ecologist Larissa, AWC Wildlife Ecologist Karen, Ngarinyin Woman Travina and Dambimangari Ranger Cheryln. *Rachel Treacy/WAC*.



[Inset] A GPS-collared Northern Hairy-nosed Wombat leaving its burrow. The species is rarer than the Giant Panda and monitoring data will help further our understanding of their behaviour and habitat use. *AWC*  
[This page] The tracks left by the short, broad feet of a Northern Hairy-nosed Wombat – the largest herbivorous burrowing mammal in the world – venturing out to forage under the stars. *Andrew Howe/AWC*

# Collaboration to save the Northern Hairy-nosed Wombat

ANDREW HOWE, SENIOR FIELD ECOLOGIST

CHRISTINE MAUGER, FIELD ECOLOGIST

Australia's largest wombat – the Yaminon or Northern Hairy-nosed Wombat (*Lasiorhinus krefftii*) – only lives in two small populations in outback Queensland, with the total world population being just 315 individuals. Despite these relatively small numbers, this is a remarkable conservation success story led by QLD Department of Environment and Science (DES), as the species was reduced to as few as 30 individuals in 1982.

AWC is a new partner in the DES-led Northern Hairy-nosed Wombat Recovery Program – supported by The Wombat Foundation – and collaborative efforts will continue to conserve Northern Hairy-nosed Wombat habitat and boost numbers of this Critically Endangered species. This year has seen multiple field trips into Northern Hairy-nosed Wombat territory: AWC ecologists have assisted with population censuses at Richard Underwood Nature Refuge (RUNR) and at Epping Forest National Park (Scientific); undertaken a caretaker role at RUNR in October; and surveyed part of the species' historical distribution to find additional suitable habitat.

## Northern Hairy-nosed Wombat trapping at RUNR

In late April, two AWC ecologists travelled over 1,500 kilometres from their tropical base in Cairns to RUNR in chilly south-central Queensland. It is here that the smaller of the two Northern Hairy-nosed Wombat populations resides. For the first time, a refuge-wide census of an estimated 15 animals was attempted by DES staff, AWC ecologists and volunteers. AWC helped with health assessments, genetic sampling and fitting some individuals with GPS collars.

After an extended drought, the region where the nature refuge is located has received above average rainfall for the past three years and the landscape is responding dramatically with a flush of new growth. These conditions have allowed the wombats to gain weight, and those trapped recorded almost perfect health scores. With such an abundance of food around, it made trapping wombats incredibly challenging. Conditions were not on our side with unseasonal rain – who wants to leave a cosy and warm burrow to go out in the wet? – and only four individuals were captured.

Unlike most wildlife, Northern Hairy-nosed Wombats do not respond to food baits, so large, custom-built traps are placed at their burrow entrances in the hope that individuals will be captured upon exiting. The challenge lies in the fact that happy, healthy and round-bellied wombats can easily wait out even the most dedicated ecologists until we give up and move our traps elsewhere. When we were lucky enough to catch one, it was an

amazing experience to witness these 'bulldozers of the bush' up close. Some of the bigger individuals measured over one metre in length and weighed up to 32 kilograms!

## Censuses and caretaking

In September, AWC ecologists headed to Epping Forest National Park (Scientific) in central Queensland where the larger of the Northern Hairy-nosed Wombat populations resides. Here, we assisted DES staff in undertaking a 'hair census'. Double-sided tape was placed across the entrance of each burrow, collecting hair samples as the wombats moved about. From these samples, DNA will be extracted, allowing individual animals and their sex to be identified. This simple, non-invasive technique is incredibly useful as a means of obtaining population estimates for a species that is notoriously difficult to study in the wild.

Over the month of October, AWC ecologists returned to RUNR to conduct the caretaker role. This has allowed AWC scientists to gain a better understanding of the property, the wombats and their habits. The caretaker role involves maintenance of the predator-proof fence, the removal of targeted weed species, monitoring camera traps and downloading and collating data, daily tracking of wombats fitted with GPS collars and recording activity levels around burrows.

## The future

As part of the collaborative project to secure the species, AWC is working to acquire additional property that has habitat suitable for Northern Hairy-nosed Wombats. The challenge is that the species has very specific soil type and depth requirements – deep sandy loam or sandy clay soils to a depth of at least 2.5 metres. This allows the wombats to dig their burrows deep enough to stay cool in the hot summer months and warm over the cool winters.

Excitingly, AWC ecologists and soil scientists have now inspected a property within the species' known historical range that has the required habitat to potentially sustain a large population. AWC is committed to supporting the recovery of the Northern Hairy-nosed Wombat – one of the world's most endangered mammals – and, although still only in the early assessment phase, this is potentially a positive step for their conservation.

**Are you passionate about Northern Hairy-nosed Wombats?**

Your support can help test habitat for the Critically Endangered species





Karrinyarra (Central Mount Wedge) stands sentry over the vast landscape and shimmering salt lakes of Ngalurrju Aboriginal Land Trust. *Brad Leue/AWC*



## *Ngalurrtju Partnership protects Australia's red centre*

*DANAE MOORE, WILDLIFE ECOLOGIST  
STEVE ELDRIDGE, OPERATIONS MANAGER*



The Ngalurrjtju Partnership is a bright spot for conservation and represents a unique opportunity to establish a template for collaborative conservation management. *Brad Leue/AWC*

Earlier this year, AWC announced the establishment of a new and exciting partnership in Central Australia that is delivering conservation outcomes on a colossal scale. The partnership sees Traditional Custodians, the Central Land Council (CLC) and AWC working together to protect and enhance the conservation values of Ngalurrjtju Aboriginal Land Trust. Together with adjacent Newhaven Wildlife Sanctuary, this brings almost 600,000 hectares of the country's red centre under conservation management – an area about half the size of Sydney or roughly equivalent to 4.8 million Olympic swimming pools.

Ngalurrjtju Aboriginal Land Trust sprawls across 338,000 hectares on the eastern edge of the Great Sandy Desert bioregion in the Northern Territory. The landscape is breathtaking, punctuated by shimmering chains of salt lakes, vast red dunefields and dramatic purple-red quartzite mountains. Diverse plant communities form a green, yellow and grey patchwork that mirrors the topography, cresting at Karrinyarra's (Central Mt Wedge) peak of 1,067 metres – the highest peak on the Stuart's Bluff Range.

### ***The Ngalurrjtju Partnership***

In these early stages, the focus has been on building relationships with Traditional Custodians and developing a shared vision for Ngalurrjtju Aboriginal Land Trust. AWC staff have been spending time on Country with senior people, learning and sharing ideas about future

management. Custodians are overwhelmingly supportive of the partnership and excited to collaborate.

Currently, AWC and the CLC are establishing a Steering Committee which will oversee the work undertaken on Ngalurrjtju Aboriginal Land Trust and endorse work programs and management activities. There are four estate groups connected to the property, and each of these will be represented on the Committee.

A key objective of the Ngalurrjtju Partnership is to provide the opportunity for Custodians to be able to do conservation work on their own Country. Two Indigenous ranger teams are being developed, each consisting of eight paid positions, to work with AWC to deliver a conservation land management program. With intimate knowledge and observation of their Country and incredible tracking abilities, Indigenous rangers will bring many skills and abilities to the program. AWC also plans to provide training opportunities for rangers to develop skills in contemporary conservation land management techniques.

### ***Conservation science and land management***

AWC and Traditional Custodians are developing an overarching five-year plan to form the basis of future management activities. The plan will identify biodiversity and cultural assets to be protected, how threats to these assets will be managed, and how the health of assets will be monitored over time.

Over the coming months, survey work will commence to gather information on the distribution and abundance of threatened animals by combining the expert tracking skills of Traditional Custodians with contemporary scientific techniques such as live trapping and camera trapping. Motion cameras will be deployed on Karrinyarra to survey for the Critically Endangered Central Rock-rat (recently reintroduced to Newhaven). Despite a relatively low chance that the rock-rats still occur on Ngalurrtju Aboriginal Land Trust, the species is currently in a boom phase of its population cycle and this is the optimal time to conduct surveillance monitoring. The resulting data will provide valuable baseline information for future reintroduction discussions.

In late October, when the onset of summer heat breaks the Great Desert Skink's period of winter inactivity, a group of Custodians and rangers will travel to Newhaven and take part in a ranger exchange program. This program, funded by the Australian Government, will facilitate knowledge sharing between Newhaven Rangers and Ngalurrtju Rangers. Equipped with the knowledge of how to identify Great Desert Skink burrow systems in the landscape, Ngalurrtju and Newhaven Rangers will spend time searching for likely habitat on the property and begin building a picture of the skink's distribution.

Plant and animal species records are scant for Ngalurrtju Aboriginal Land Trust, but the species inventory

***» I think it's great for all our Traditional Owners to come back home and work together as one and look after the country and the plants and animals. It's really special for us in this area. «***

***Terrence Abbott,  
senior Custodian***

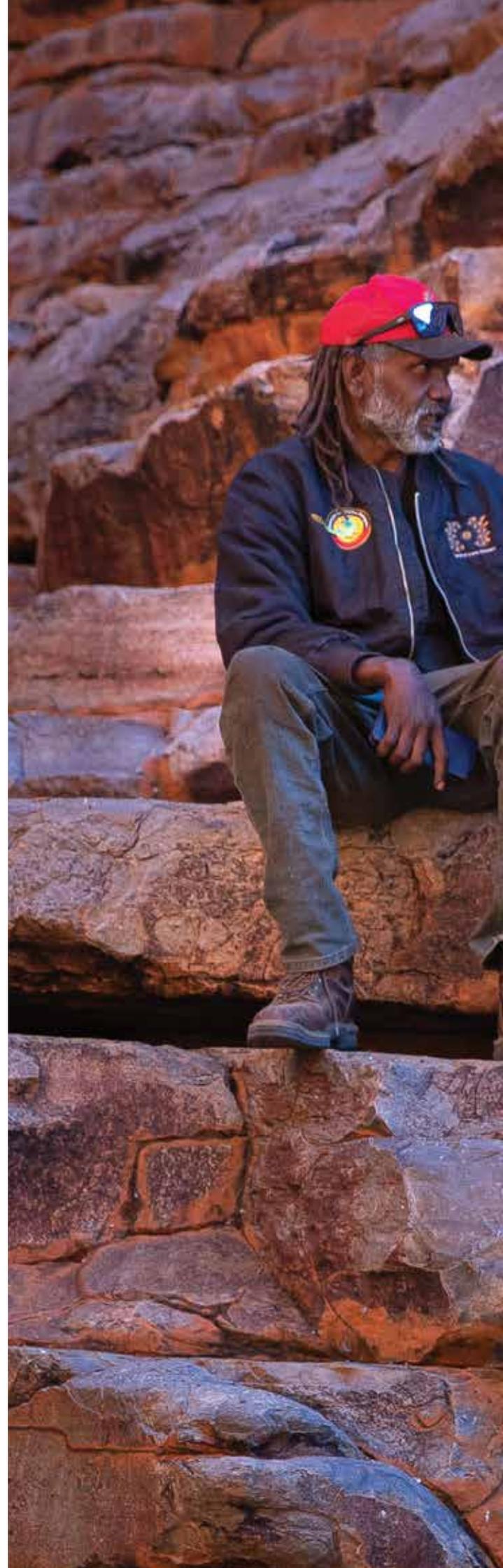
is already growing steadily. Black-footed Rock-wallaby populations have been found on both major range systems (Siddeley and Stuart's Bluff Ranges), as well as several pairs of Grey Falcons breeding in response to booming rodent populations, and a Fat-tailed Pseudantechinus living in one of the sheds.

AWC's land managers have been busy setting up the old homestead as an Operations Base. After almost 30 years of lying vacant, there's a lot of work to do including restoring water supplies and re-connecting power and communications. The bore has been equipped with a solar submersible pump and is now supplying an abundance of fresh water. Inspection of the electrical system unfortunately revealed significant damage and underground cables and wiring in the homestead will need to be replaced. Restoration of buildings and sheds will be ongoing for many months to come, but the old house and several sheds are now in use. The site has significant historical value and the aim will be to preserve the unique character of the old homestead and its outbuildings.

After two good years of rain, fuel loads and fire risk across the property are high. AWC land managers have been busy burning breaks around the Operations Base to protect buildings and infrastructure. They are also working to build control lines by grading and opening old vehicle tracks, many of which have become overgrown since pastoral operations ceased. These will be used to control any wildfires that eventuate in summer. In the meantime, planning is underway for landscape-scale fire management across the entire property.

Feral camels are seen regularly on Ngalurrtju Aboriginal Land Trust and Custodians have already identified several significant sites being damaged by these feral herbivores. Maintaining the camel population at an acceptable level will be key to protecting the property's biodiversity and cultural assets. Other significant pest species include feral cats, foxes and rabbits. Strategies for managing these species will be developed in collaboration with Custodians.

Fortunately, only a handful of weed species have been recorded on the property. The most abundant of these, buffel grass, is widespread in certain habitats and rare or absent in others. Managing this species will focus on minimising impacts at significant sites rather than broad-scale control.



*Watch the video to learn more about this inspiring partnership*







*Watch the video to hear from the team on the ground during this high-stakes translocation*



[Top] Central Rock-rats were airlifted to safe refuge in a joint effort by ecologists and zoologists from AWC and the NT Flora and Fauna Division and Parks and Wildlife Division, endorsed by Traditional Owners. *Brad Leue/AWC*  
[Bottom] The stocky, fluffy Central Rock-rat weighs less than 170 grams and is one of Australia's most endangered mammals. *Brad Leue/AWC*

## *A rock-rat in a hard place*

**DANAE MOORE, WILDLIFE ECOLOGIST**  
**JOEY CLARKE, SENIOR SCIENCE COMMUNICATOR**

The stars are out, but the tumbled slabs of quartzite are still warm when one of Australia's rarest mammals emerges from a little crevice to begin its night-time activity, whiskers twitching in the cold night air. It's looking for food and conditions are good; two years of decent rainfall in Central Australia has triggered a burst of plant life, including flowering shrubs and grasses which produce nutritious seed in abundance. The Central Rock-rat (*Zyomys pedunculatus*) is a species teetering on the edge of oblivion. Over the past two decades, the population has fluctuated in response to alternating periods of high and low rainfall, and in recent years the NT Government has been implementing a targeted baiting program to reduce feral cat numbers near known colonies. After years oscillating back and forth on the edge of existence, this is boom time for the Central Rock-rat. For the ecologists trying to prevent Australia's next mammal extinction, the time to act is now or never.

Australia's native rodents include some of the country's most remarkable mammal species – from accomplished engineers who build elaborate homes of sticks or stones, to the giant White-tailed Rat which can chew through tin cans. There's the aquatic Rakali which swims along hunting for yabbies and mussels, and fleet-footed hopping mice, leaving their tracks across the dunes as they bound through the sandy country of the inland. These rats and mice may struggle to capture public attention in the same way as Koalas or Bilbies, but they include some of our most imperilled species.

The rock-rats in the genus *Zyomys* are a group of five species, three of which are classed as threatened, found across the more rugged pockets of central and northern Australia. Four are relatively large, weighing about the same as a cricket ball, with a long, thick tail used to store fat – a helpful adaptation during lean times in the arid zone.

Once found across a broad swathe of Central Australia, the Central Rock-rat has disappeared from more than 95% of its pre-European distribution. For decades it seemed to have disappeared completely and was presumed extinct until a tiny population was rediscovered in 1996, clinging to the steep slopes of the West MacDonnell Ranges in Tjoritja National Park near Alice Springs. In 2018, it was assessed as the mammal most likely to become extinct in the next two decades – the clearest signal yet that it was time to intervene to save the species. AWC had previously identified the rock-rat as a prime candidate for translocation to the 9,450-hectare feral predator-free fenced area at Newhaven Wildlife Sanctuary, which lies within their historical range. At

Newhaven, AWC has been restoring healthy fire patterns and managing feral animals for more than a decade to improve ecological health.

This year, over five nights in the last week of July, a joint team of ecologists and zoologists from AWC and the NT Flora and Fauna Division and Parks and Wildlife Division, endorsed by Traditional Owners, trapped rock-rats from sites across Tjoritja National Park and airlifted them to Newhaven.

The translocation required some high-level logistics involving a Jet Ranger helicopter, six vehicles and more than a dozen people working across five sites in some of the most precipitous terrain in Central Australia. Teams and field equipment were flown into the more remote locations to establish trapping sites across Chewings and Heavitree Ranges, 60–85 kilometres west of Alice Springs. At dusk, the teams set small aluminium box traps, baited with peanut butter and oats, and returned at daybreak to check the traps and collect the rock-rats. Animals were bundled carefully into pet packs then transported to Ormiston Gorge Ranger Station, where DNA samples were taken for an assessment of the population's genetic diversity.

From Ormiston Gorge, 58 of the rock-rats were transferred 185 kilometres, 90 minutes by helicopter, directly to the top of Wardikipirri Range, a 10-kilometre-long quartzite outcrop that sits within the fenced area at Newhaven. As the sun set, they were released into suitable habitat identified by the AWC team: small rocky gorges with abundant crevices close to country that's been burnt within the past few years. Fire history was an important consideration, as fires promote the growth of some important food plants for the rock-rats.

In addition to the Central Rock-rats released at Newhaven, 16 individuals were taken to Alice Springs Desert Park, where they will become founders of a new captive breeding program that hopes to boost numbers for subsequent releases. The translocation to Newhaven, coupled with the captive breeding colony, aims to help secure the future for this species – potentially making the difference between survival and extinction – and this highly significant conservation project is supported by funding from the Australian Government. If the new population becomes established throughout the rocky ranges, it is predicted that Newhaven could support a population of around 800 Central Rock-rats in ideal conditions. This is the sixth species translocated to Newhaven, one of the world's most important rewilding projects.

[This page and opposite page] The project is breaking new ground in AWC's conservation model of exclusion fencing and will make a major contribution to saving the Endangered Northern Bettong from extinction. *Sally Gray/AWC, Wayne Lawler/AWC*

## ***Breaking new ground for the Northern Bettong***

***TIM WHITE, REGIONAL OPERATIONS MANAGER***

***JOSH MCALLISTER, SANCTUARY MANAGER***

***FELICITY L'HOTELLIER, SENIOR FIELD ECOLOGIST***

***DR ALEXANDER WATSON, REGIONAL ECOLOGIST***

After almost two decades of considered stewardship at Mount Zero–Taravale Wildlife Sanctuary, AWC is on the cusp of a translocation that will result in securing a new population of the extremely rare Northern Bettong in the diminishing tall wet eucalypt forests of north-east Queensland.

The well-documented absence of the Northern Bettong from its historical range in this area has informed the core of investment by AWC in a land management strategy of habitat rehabilitation. Removal of cattle, implementation of frequent and diverse prescribed burning, and manual and mechanical thinning of understorey woody weeds and vegetation in the wet sclerophyll forests are helping to rewind the clock on the regional trend of habitat loss.

AWC monitoring of indicator animal and plant species has found the strategy is working – halting woody thickening and restoring the grassy understorey among the tall forests which provide critical food and refuge for

the Northern Bettong. But the last and most significant component of securing the future of the species – shared by so many small- to medium-sized mammals across Australia – is protection from feral predators, particularly cats. Since their introduction, cats have spread to occupy more than 99% of the continent and every night kill more than six million animals. Juvenile Northern Bettongs are particularly vulnerable to predation by these introduced predators.

### ***Planning the first feral predator-proof fence in northern Australia***

Adjacent to the Wet Tropics World Heritage area, the north-eastern part of Mount Zero–Taravale consists of rugged topography, steep elevations between 1,000 and 700 metres, annual average rainfall over 2,000 millimetres and rainforest-fringing tall eucalypt forests with trees up to 75 metres high, all in a cyclone region. This is a formidable combination of terrain, climate and forest in which to build the first feral predator-proof (exclusion)

fence in northern Australia. The challenges the team face are unprecedented, but initiative and dedication are values entrenched in the conservation model delivered by AWC.

Over the last four years, a digital representation of a 13-kilometre fence line, encompassing an area of approximately 1,000 hectares of tall eucalypt forest, has been checked on the ground and painstakingly adjusted for what was intuitively considered a path of least resistance.

Late in 2020 – amongst the challenging social and travel restrictions of COVID-19 – Gugu Badhun Traditional Owners, Sanctuary Manager Josh McAllister, Senior Field Ecologist Felicity L’Hotellier, Land Management Officer Aaron Harper and other regional ecologists and botanists surveyed the fence line for Indigenous cultural heritage, environmental values and final adjustments of alignment. While vegetation and environmental management legislation was navigated, a physical as well as regulatory pathway was revealed.

With 13 kilometres of fencing materials already purchased and delivered to site, clearing a 10-metre-wide pathway through the forest began in earnest in the second half of 2021 as the northern dry season progressed. The North Queensland vegetation, topography and hydrology challenged the tried and tested AWC fencing design and methodology borne out of many years of delivering a successful conservation model in central and southern Australia.

Professional engineers were contracted to design crossings of waterways accounting for several metres of wet season runoff and considering vehicle access and fence security. These solutions came at a cost that was immediately prohibitive even for the most optimistic and successful philanthropic organisation. The AWC model and values were again apparent as land management experience was tested to find a more traditional solution of floating floodgates and anchors.

### ***Fence construction begins***

A modest wet season between 2021 and 2022 provided excellent conditions for settling the ground along the fence line after the first clearing was achieved. Final fence design and the process of finding a contractor began, along with the ongoing application of prescribed burning in the sclerophyll forest. An experienced and familiar face in Mike McFall was eventually awarded the contract to work with AWC land managers in installation of the fence (Mike has been involved in fence construction at AWC’s Mt Gibson and Newhaven Wildlife Sanctuaries, at Pilliga State Conservation Area and Mallee Cliffs National Park, and the Western River Refuge). A range of upsizing measures have been employed from the type and size of machinery engaged in vegetation and earth moving, to the size of steel posts around the 13-kilometre fence.



Fencing began in July 2022 with a forecast completion of October/November. Plans for feral animal eradication within the fenced area are also taking shape. A strategy informed by a camera trap grid throughout the exclusion fence must meet the requirements of the translocation agreement with the QLD Department of Environment and Science, specifically the eradication of feral pigs, feral cats and cattle.

The project makes a major contribution to saving the Endangered Northern Bettong from extinction and continues to break new ground in many facets of the AWC conservation model of exclusion fencing. The challenges the team face in building and maintaining this safe haven in a cyclone region are unmatched – when, more than ten years ago, a cyclone hit Mount Zero–Taravale it took sanctuary managers a week to cut themselves a driveway to get to the main road. These challenges will be met with initiative, dedication, resilience and tenacity from the AWC team. Support from the Australian Government, the Oak Foundation, WIRES, AWC US, and donations from generous supporters around the world have helped make this ambitious and challenging project an exciting reality.

### ***Support rewilding efforts***

Your gift will help AWC make a major contribution to the conservation of Australia’s threatened mammals



# ***Conservation education critical to securing the future of Australia's wildlife***

**HELEN CRISP, REGIONAL ECOLOGIST**

**CHALALI HOLNESS, CONSERVATION AND ECOLOGY INTERN**

**SOPHIE WINTER, SOCIAL MEDIA MANAGER**

Conservation education aims to enable complex ecological problems to be widely understood and inspire care for natural resources, meaning that through education we can help improve the environment. AWC is investing in the long-term protection of Australia's wildlife and habitats by educating and inspiring future conservationists, ecologists and environmental scientists.

This investment is demonstrated in two parts. The first being AWC's annual internship program, which offers promising graduates the opportunity to gain valuable experience in conservation ecology. The second is AWC's school education program, where guided tours and overnight excursions give primary and tertiary school children a glimpse at the remarkable and ecologically significant environments on AWC sanctuaries and partnership areas.

Education is also delivered through communication. Every story AWC shares – and that you share with your friends and networks – connects to the greater vision: to see a world where Australia's biodiversity is valued and effectively conserved by an engaged community.

## ***Internship program to train future conservationists***

AWC offers a unique Conservation and Ecology Internship program with the aim of introducing talented graduate scientists to a variety of plants and animals, sharing practical field skills and animal handling techniques, and developing their understanding of current and challenging conservation issues.

The program was initiated in 2008 thanks to funding from generous AWC supporter Ross Knowles. It has continually expanded and evolved over the last 15 years – growing from just one intern per year to 21 outstanding graduates in 2023.

Chalali Holness has been an intern with AWC's South-east team since May 2022, with involvement in projects on Scotia Wildlife Sanctuary, and Mallee Cliffs National Park and the Pilliga Partnership Area, where AWC works in collaboration with the NSW Government.

*'It has always been a dream of mine to move into a career that will benefit my people and work closely with Indigenous practices and cultures. As a First Nations person, I always want to keep my Country in the forefront of my mind no matter what I do. It has been*

*a heart-warming experience seeing the science and operations teams across the industry use Indigenous names for native wildlife as well as integrating any Indigenous practices that they have learnt.*

*If this area is your passion, Australian Wildlife Conservancy is a perfect organisation to work for. It is clear every team member is passionate about their work and wants to dedicate their energy and faith into creating a supportive and thriving environment for native animals and plants as well as their workers, volunteers and supporters.*

*Each team member will go above and beyond to leave a lasting positive impression and ensure everyone is developing and implementing the appropriate models of conservation.'*

## ***Nature immersion camps inspire and educate school-aged students***

When you think back to your childhood, are there particular moments of awe that stand out in your memory? A joyful bushwalk with family or friends? Your first encounter with an animal that left you curious to learn more?

Early experiences like these provide a connection to the natural world and the desire to protect it.

AWC staff are passionate about getting young people out into nature, to experience Australia's unforgettable environments and learn the importance of protecting our ecosystems.

Karakamia, Paruna, and Mt Gibson Wildlife Sanctuaries in Western Australia host single- and multi-day school education programs, with ecologist-guided experiences tailored to suit the needs of individual groups. Mornington Wildlife Sanctuary in the Kimberley hosts annual school visits. Mount Zero–Taravale Wildlife Sanctuary in Queensland's Wet Tropics also sporadically hosts school excursions and outdoor education programs. Mount Zero–Taravale and Bowra Wildlife Sanctuary in Queensland's Mulga Lands bioregion host university visits.

Yookamurra Wildlife Sanctuary, in South Australia's Murraylands region, has a long-standing education program. AWC staff have developed activities and projects closely linked to the South Australian school curriculum.

AWC Regional Ecologist Central-south, Helen Crisp, is



based at Yookamurra and leads both the regional science program and Yookamurra's dedicated wildlife education program.

*'Over the years, we've had thousands of students through the feral-proof gates of Yookamurra. The activities we do are centred around science and increasing awareness of Australia's biodiversity – the students are given the opportunity to go into the field, collect and analyse their own data, and discuss the results with their peers, teachers, and AWC staff.'*

*School groups can either visit for a day or stay overnight at the sanctuary for a unique and exciting school camp experience, with AWC staff providing education and activities on threatened species and scientific methods of conservation.*

*With the aim of providing scientific outcomes, we have developed a series of guided projects which encourage students to experience and understand the complex interactions that make up our unique Mallee ecosystem.'*

Over the coming years AWC plans to work to increase our external engagement, particularly through education, to share the value of Australia's unique biodiversity and inspire the passion to protect and restore it.



[Top] AWC Intern Chalali Holness inspects a Stripe-faced Dunnart. Vicki Stokes/AWC

[Bottom] Students from Carey Baptist Grammar School participate in outdoor education at Mount Zero-Taravale Wildlife Sanctuary. Oli Ayles/AWC

