



**WARDDEKEN
ANNUAL
REPORT
2021-22**



NGARRIDJARRKBOLKNAHMAN KUNRED

LOOKING AFTER COUNTRY TOGETHER



The bidbimyo (hand stencil) at the centre of the Warddeken logo is the hand of Warddeken's founder and patron, Bardayal Lofty Nadjamerrek AO (Wamud Namok, 1926-2009). Our logo reminds us that it was his guiding hand that led the land management movement in western Arnhem Land.

Warddeken Land Management Limited
ABN 12 128 878 142

PO Box 785, Nightcliff NT 0814
Email: ceo@warddeken.org.au

warddeken.com

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Front cover: Janice and Margaret Nalorlman hunt for kedjebe (file snakes) on a floodplain near Mamadawerre ©Matthew Abbott

Right: Layers of paintings on the roof of one of the thousands of rock art shelters spread across the Warddeken Indigenous Protected Area ©Matthew Abbott





Vernon Garnarradj, Kaywana Gamarrwu and their daughter Vinnesha Garnarradj arrive at camp for the night after a day of walking and burning on a stone country bushwalk ©Matthew Abbott

**OUR VISION IS TO HAVE
OUR HEALTHY PEOPLE
LIVING AND WORKING ON
OUR HEALTHY COUNTRY
IN THE KUWARDDEWARDDE
– THE WEST ARNHEM
PLATEAU.**

**WE WANT THE MANAGEMENT
OF OUR LAND TO BE IN
OUR HANDS NOW AND
INTO THE FUTURE.**



Opposite left to right: Delvina Guymala, Aspellita Guymala, Rosemary Nabalwad and Seraphina Watson are all smiles as they prepare to head off to a women's ranger camp.

DEDICATION

KELA NAREMBARRNGA 1952 - 2022

There are a handful of exceptional individuals without whom Warddeken would not be the company it is today. At the beginning of 2022, we lost one of these very special people, Kela Narembarrnga.

A Rembarrnga man with matrilineal connections to Manmoyi and Mamadawerre in the Warddeken IPA, Kela was one of the original team of Nawarddeken to follow Bardayal Nadjamerrek to Kabulwarnamyo to build a community and a ranger program. He was instrumental in the establishment of the Manwurrk Rangers, Warddeken Land Management and the WALFA Project, amongst other achievements throughout his life.

Kela was one of the hardest-working rangers ever to wear the Warddeken uniform, taking particular pride in seeing a job through to its completion and doing the job well. Kela took it upon himself to mentor many yawurrinj (young men) over the decade-and-a-half he spent working in the Kuwarddewardde, and many rangers working for Warddeken today are the beneficiaries of Kela's knowledge and skills in managing the plateau.

On top of this Kela was humble, kind, and sharply intelligent – the rare person universally respected and beloved. Warddeken extends our deepest sympathy to Kela's family. His loss is immense, and we dedicate this report to his memory. Thank you, Kela, for giving so much of yourself and helping make Warddeken the company it is today.



WARDDEKEN OVER THE YEARS

Vision of Professors

2002

Kabulwarnamyo community established by Mok elders, families and dedicated group of balanda friends

2004

Manwurrk Rangers (Northern Land Council) formed, operating as CDEP ranger group (04-08)

2005

Meetings of west and central Arnhem Land elders and leaders to discuss concerns about bushfires and feral animals

2006

Inaugural Stone Country Bushwalk from Kamarrkawarn to Kabulwarnamyo

2006

WALFA Project funded

2014

NAIDOC Caring for Country Award

2012

Manmoyi ranger base established

2011

Banksia Award accepted on behalf of WALFA partner groups - 'WALFA Partnership: a 140% success'

2009

Warddeken IPA declared

2008

First large scale aerial feral animal cull

2007

Warddeken Land Management Limited registered

2015

Nawarddeken Academy community school established

2017

Established Mayh (Species) Recovery Monitoring Network

2017

Established Daluk (Women's) Ranger program

2018

Nawarddeken Academy gains Independent School Registration

2018

Wakadjaka (Monitoring and Evaluation) Subcommittee established

2018

Banksia Indigenous Award for achievement against UN Sustainability Goals

2018

Mamadawerre ranger base established

2019

10-year IPA anniversary

2019

Established Kunwarddebim Rock Art Program

2020

Board member Fred Hunter receives NT Ranger of the Year Award

2021

Nawarddeken Academy Manmoyi and Mamadawerre campuses gain Independent School Registration

2021

Territory NRM Collaboration Award in partnership with Karrkad Kanjdji Trust and Mimal Land Management

Onwards

THE WARDDEKEN IPA



- Ranger Bases
- Townships
- Seasonal camps
- Outstations



Motion sensor camera deployment is a key feature of the Mayh Species Recovery Program, with rangers required to carry equipment across rocky and rugged terrain.

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Sham Mangiru painted in delek (white ochre) after visiting an important site on the 2022 stone country bushwalk.

THE WARDDEKEN STORY

The Warddeken story begins officially in 2002 when the venerable Bardayal Lofty Nadjamerrek AO led a return to his country at Kabulwarnamyo and established the plateau's first ranger program. Yet, the Warddeken story goes back much further than this, to the unbroken connection of Bininj Nawarddeken to the Kuwarddewardde (stone country of the west Arnhem Plateau) and their perpetual desire to care for this estate. In honouring the profound relationship between country and people, Warddeken is reconnecting Landowners with country, preserving unique knowledge systems and languages, and empowering Bininj Nawarddeken to care for the Kuwarddewardde with customary and contemporary management practices.

Nawarddeken clan groups have called the Kuwarddewardde home for millennia, caring for and shaping the landscape with management practices encompassing the spiritual, religious and pragmatic. During the wet seasons, family groups moved to the higher grounds and shelter of rocky escarpments, which to this day bear the stories of clans and families painted in ochre over tens of thousands of years. When the rains ceased, people moved down to the open woodlands, walking and camping along Bininj manbolh (walking tracks), lighting small, cool fires across their clan estates in yekke (early dry season) and wurrkeng (mid dry season). Djungkay (ceremonial managers by matrilineal inheritance) performed and oversaw ceremonies to encourage the regeneration of food plants and the proliferation of animal species. Senior Landowners frequently visited djang (sacred sites) and other places of cultural import, to show respect to ancestors and creator spirits, and to perform requisite rituals.

The Kuwarddewardde remains the home of the Nawarddeken people, and today is also the location of Warddeken Land Management's three ranger bases. However, for many long years, the stone country was devoid of people – with the arrival of balanda (Europeans), Nawarddeken began to leave the Kuwarddewardde, lured by Christian and government missions, opportunities to work in the mining and buffalo industries, and the appeal of larger settlements such as Gunbalanya and Maningrida. By the late 1960s, the Kuwarddewardde was largely depopulated. Nawarddeken elders considered the country orphaned and despaired for its future. For the next 30 years, our old people – the Warddeken professors – saw and felt the devastation of large wildfires and an increasing number of feral animals threatening the physical and cultural landscape of the Kuwarddewardde.

Their concern was matched by a desire and motivation to return to country, to once again look after the Kuwarddewardde and teach their knowledge to younger generations. In the early 1970s, our visionary leader, Bardayal Lofty Nadjamerrek AO began the long process of bringing Nawarddeken back to their homeland communities, working tirelessly for the next three decades to reconnect country and people.

In 2002, Bardayal was finally able to move back permanently to his own

country on Mankungdjang estate (sugar bag dreaming) at Kabulwarnamyo, where he worked alongside other Bininj leaders including his wife Mary Kolkiwarra, Jack Djandjomerr, Josie Maralngurra, Jimmy Kalariya and Ruby Bilidja, alongside committed balanda friends, to establish the Manwurrk Ranger program. The establishment of the Manwurrk Rangers (the predecessor of Warddeken Land Management) allowed Landowners for the first time to make a living on country. Since then, Warddeken has grown to provide permanent employment opportunities for Nawarddeken living in the communities of Kabulwarnamyo, Manmoyi, Marlkawo and Mamadawerre.

The Manwurrk Rangers helped pioneer many innovative fire management initiatives, including the world's first savanna carbon project, the West Arnhem Land Fire Abatement Project (WALFA). Since WALFA began, carbon projects have become one of the biggest Indigenous industries and economies in Australia and Nawarddeken take pride in the fact that this success story originated in the Kuwarddewardde, based on the knowledge of Nawarddeken Professors.

In 2007, after extensive consultation and meetings between Landowners and the Northern Land Council, Warddeken Land Management Limited was formally registered as a not-for-profit public company limited by guarantee, and the Manwurrk rangers evolved into Warddeken. Our company is responsible for looking after the Kuwarddewardde, just as our ancestors were. We achieve this through delivering a work program following the Kuwarddemalkno (seasonal calendar), designed to meet the goals and objectives set out in the current Warddeken IPA Plan of Management.

The 2021-2025 Plan was launched this year and was developed through a process of wide-ranging Landowner consultations. Warddeken's annual work program now includes fine-scale and landscape-scale fire management, feral animal culls, weed control, rock art survey and conservation, and supporting the recovery of our unique and threatened biodiversity. Through the work of managing the Warddeken IPA, Nawarddeken are able to live secure lives on country with access to fresh bush food and meat, distance from the social problems of larger communities, and an ability to care for the sacred places and cultural sites that sustained our people over the generations.



Top: A striking cliff face on the eastern boundary of the Warddeken IPA ©Matthew Abbott



Right: A troop carrier stops at a river crossing to allow rangers to cool off and refill water bottles ©Matthew Abbott

OUR PROFESSORS

We acknowledge the most senior and knowledgeable Nawarddeken as our professors – those who are still with us and those whose spirits have returned to the Kuwarddewardde. Their wisdom and foresight set us on the path we follow today and their vision continues to guide us into the future.

This year, the Warddeken board passed a resolution formally recognising the status of Warddeken’s current cultural leaders as professors. These individuals are well into their eldership and will be included in the list of professors who have worked over the years to build Warddeken.



**Bardayal Lofty
Nadjamerrek AO**
1926-2009



Jimmy Kalariya Namarnyilk
1934-2012



Peter Nabarlambarl Billis
1935-2012



Jack Djandjomerr
1945-2014



Ruby Bilidja
1930-2014



Mary Kolkiwarra Nadjamerrek



Josie Maralngurra



Lillian Guymala



Wurdib Nabulwad



Leanne Guymala



Molly Nayilibidj
1950-2021



Leonie Guymala
1938-2014



Timothy Nadjowh AO
1923-2017



Jacob Nayinggul
1943-2012



Djawida Nadjongorle
1933-2012



Mary Naborlhborlh
1930-2012



Nigel Gellar
1952-2022



Margaret Nalorlman Nabulwad



Deborah Nabarlambarl



Dean Yibarbuk

OUR AIMS

.....
Conserve Indigenous knowledge
.....

Protect the environmental values of the land
.....

Participate in natural and cultural resource management projects
.....

Participate in fire, weed, feral animal and threatened species management
.....

Alleviate poverty, suffering, isolation, serious economic disadvantage, and improve our members' health and wellbeing
.....

Manage the IPA as part of the Australian National Reserves System in accordance with IUCN Category VI
.....

Advance Indigenous education



Stacey sets country alight under the guidance of her family during a 2022 bushwalk ©Matthew Abbott

BOARD OF DIRECTORS

Three board members are elected triennially for each ward of the Warddeken IPA: kakbi (north), karrikad (west), walem (south) and koyek (east). This is accomplished through an open election process, with mobile polling conducted at the majority of communities where Nawarddeken reside.

At the end of 2019, elections were held and the following board members were voted in to represent members for the period 2020-2022 (calendar years).



From top: Alyurr (Leichhardt's grasshopper) is an endemic stone country species which in Bininj lore is also the name of the lightning spirit being associated with the grasshopper. Alyurr are primarily seen in the build-up season kurrung and early wet kumemeleng when there are many electrical storms.

A healthy freshwater billabong filled with barradjungka (waterlilies).

More than 440 Bininj Nawarddeken with connections to the clan estates of the IPA are registered members of Warddeken Land Management Limited. Warddeken is governed by an entirely Indigenous Board of Directors derived from this membership base.

KAKBI

- Kevin Bulliwana
- Conrad Maralngurra
- Rosemary Nabalwad

Representing clan groups: Warddjak (Maburrinj), Ngalngbali (Kudjekbinj), Yurlhmanj (Djalbangurrk), Madjawarr (Kunukdi), Marrirn (Kumarrirrbang), Wurrik (Mandedjkadjang), Mayirrkulidj (Djurlka), Durlmangkarr (Kudjaborrng/Kunburray), Djok (Ngolwarr) and Barrbinj (Kumarrirrbang/Kudjaldordo)

KARRIKAD

- Jessie Alderson
- Fred Hunter
- Kenneth Mangiru

Representing clan groups: Manilakarr Urningangk (Mikkinj), Maddalk (Kumalabukka), Warddjak/Worrkorl (Balmana from Kundjikurdubuk), Bolmo (Dedjrungi and Dordokiyu), Badmardi (Balawurru, succession/caretaking), Wurnkomku (Nawoberr) and Danek (Kudjumarndi)

WALEM

- Mavis Jumbiri
- Richard Miller
- Dean Yibarbuk

Representing clan groups: Djorrrolom (Bamo), Murruba (Morre), Karnbirr (Djohmi), Mimbilawuy (Karlgarr), Barabba (Mimbrung), Mandjuwarlwarl (Bobbolinjarr), Bolmo (Marlkawo), Barradj (Yanjkobarnem), Buluwunwun (Walangandjang) and Bulumo (Makkebowan)

KOYEK

- Terrah Guymala
- Elizabeth Nabarlambarl
- Lois Nadjamerrek

Representing clan groups: Bordoh (Ngorlkwarre), Mok/Berdberd (Ankung Djang/Ngalkombarli), Yamarr (Kidbulmaniyimarra), Kulmarru (Kubumi), Rol (Bolkngok), Djordi/Djorrrolom (Kodwalewale), Wurrbbarn (Nabrang) and Warridjngu (Boburrk)

KAKBI



Kevin Bulliwana



Conrad Maralngurra



Rosemary Nabalwad

KARRIKAD



Jessie Alderson



Fred Hunter



Kenneth Mangiru

WALEM



Mavis Jumbiri



Richard Miller



Dean Yibarbuk

KOYEK



Terrah Guymala



Elizabeth Nabarlambarl



Lois Nadjamerrek

GOVERNANCE



The Board of Directors at the launch of the new five-year Warddeken IPA Plan of Management.

Board Meetings

Membership of Warddeken is open to Landowners from the 35 clan groups within the Warddeken IPA. Connection to country is recognised in four distinct ways, ensuring an appropriate cultural governance structure: father's country (Daworro), mother's country (Djungkay), maternal grandmother's country (Kakkak), maternal great grandmother's country (Doydoy).

Warddeken is governed by a board of twelve Indigenous directors, representing the company's 443 registered members. The board operates at a high level, making decisions regarding the management and strategic direction of the company, developing policy, building organisational relationships and overseeing financial management.

During 2021-22 the Warddeken Board convened at Maningrida, Gunbalanya and Jabiru with all meetings achieving quorum. Due to a COVID-19 outbreak in the west Arnhem region, the 2021 Warddeken AGM scheduled for the 29th of November in Gunbalanya, was postponed. A subsequent rescheduled AGM date also had to be postponed due to a funeral. The AGM will now be held in late 2022.

Since the company was formed, Warddeken has been supported by independent governance mentor Paul 'PJ' Josif who worked closely with the chairperson and other members of the board to enhance understanding of balanda governance. Tragically, in early 2022, PJ passed away. PJ has left a lasting impact on Warddeken – through his work, friendship and exuberant support, board members have been empowered to fulfil their roles as the company's governing body.

Wakadjaka Subcommittee

The Wakadjaka subcommittee of the Warddeken board is another example of what is possible when Indigenous organisations have the capacity to determine and pursue their own priorities. To understand if Warddeken is headed in the right direction, it is essential to regularly monitor and evaluate the sociocultural and ecological assets, associated threats and operational outputs outlined in the Plan of Management. The core purpose of the Warddeken Kananan dja mak Karrmorokme (Wakadjaka) subcommittee is to evaluate the progress towards achieving the vision articulated in the 2021-2025 Plan of Management.

Subcommittee membership consists of a director from each of the four wards of kakbi, koyek, karrikad and walem and four Bininj experts. Support staff include the ecological monitoring manager, an independent facilitator who is also the subcommittee secretariat, the CEO and other staff as required.

The Wakadjaka subcommittee reports and makes recommendations to Warddeken Board on:

- If the Plan of Management is being used in the management of the Warddeken IPA
- If the Plan of Management is working
- If the two toolboxes of Traditional and western knowledge and practice are being used
- How to report on the above 1-3 so that the board, Warddeken members and other parties understand what has been achieved.

The Warddeken IPA Monitoring and Evaluation Committee met in Maningrida on the 13th – 15th of October 2021 to review the draft Plan of Management, and finalise the product for enactment. Unfortunately, the committee was unable to meet in the first half of 2022 due to ongoing COVID-related interruptions, however, at a Board of Directors meeting in June 2022, the board restated their commitment to the committee during a workshop focused on reacquainting them with the function and role of Wakadjaka.

A consultant has been engaged to facilitate Warddeken's ongoing Monitoring and Evaluation processes, including supporting the Wakadjaka committee during 2022 while the company decides how best to permanently resource this important element of the company.

Plan of Management 2021-2025 launched

The new Warddeken IPA Plan of Management 2021-2025 was formally launched in March 2022. The content of the new plan was developed after an extensive process of review and evaluation, the outcomes of which were used to generate the pathway for the next five years. In summary, the plan development process involved:

- Over 60 hours of semi-structured interviews primarily in Bininj Kunwok with 42 priority senior Landowners and rangers to assess the status of key Bininj knowledge components
- Interviews conducted at Kabulwarnamyo, Manmoyi, Mamadawerre, Gunbalanya, Jabiru, Djirrbiyak, Darwin, Manyallaluk, Baranga and Beswick
- Compilation of quantitative data on work programs, staff dynamics and biophysical indicators
- Synthesis of data into Program Reports for each asset and threat structured as per the Monitoring and Evaluation Plan
- The Wakadjaka sub-committee reviewed the Program Reports and made recommendations
- Landowner interviews, Program Reports, Wakadjaka

sub-committee recommendations, support staff and external advice were used to develop the next plan of management

- All elements of the draft plan were worked through again with the Wakadjaka sub-committee and board of directors and the recommendations were incorporated into the final document.

Key to keeping the plan alive is regular use in operational planning and regular checking up of progress through monitoring and evaluation processes. All too often after the intense effort of constructing a management plan, the document can come to gather dust on a bookshelf. Work is always happening and often delivering on strategies in the plan, but other important work detailed in the plan may be forgotten. Within the next plan period, Warddeken will see the Plan of Management become embedded within the operational framework through regular planning meetings using the plan content, reporting and telling stories about on ground work that connect to the plan's direction and a commitment to ongoing monitoring and evaluation of all aspects of the plan.

REPORT FROM THE CHAIRMAN

I write this having just returned from Ecuador, where I attended a gathering of First Nations leaders from across the world who are dedicated to protecting their land and the cultural practices that sustain the land. One thing that struck me at the gathering was how Warddeken has become a model that is recognised the world over not only for the work we do to protect country but also for the way we do this work – by empowering Bininj to plan and carry out work programs. Many of the First Nations leaders I met aspire to build a company of their own that can, like Warddeken, help them in their fight to protect their lands and waters.

There are many factors that have contributed to Warddeken becoming the company it is today – one of these is undoubtedly the leadership provided by the CEO. For the last eight years, we have been lucky to have my brother Shaun Ansell in this role. Shaun's history with Warddeken goes back to 2006 when he worked at Kabulwarnamyo as the first ranger coordinator. He knew our old people, and he understands the unique cultural and environmental landscape of the Kuwarddewardde. Because of this, because of his shared vision for Warddeken, and because of his integrity and dedication, Warddeken more than doubled in size under his leadership. On behalf of the Board of Directors, I want to thank Shaun for everything he gave to our company.

I also want to welcome incoming CEO Nina Brown, who has her own long-standing connections with Warddeken. In 2008, Nina worked alongside the community of Kabulwarnamyo to secure the first community solar power system, in the process falling in love with the



Kuwarddewardde. It is exciting to see her back, and I am looking forward to working closely with her to continue making an impact in the Kuwarddewardde.

As I approach 70, and now in my fourth decade of the Indigenous land management movement, I find myself thinking more and more about how I can support emerging generations of Bininj leaders to take on some of the leadership roles within Warddeken. Warddeken must have young people coming up through the ranks who are confident in walking in both worlds as spokespeople for their country. Over the next couple of years, one of the things I am going to dedicate myself to is supporting the development of a leadership program. It is so important to introduce young people to the governance and operational aspects of the company and to equip them with the knowledge and public speaking skills to continue telling Warddeken's story to the world.

A handwritten signature in black ink, appearing to read 'Dean Yibarbuk'.

Dean Yibarbuk
Chairman

The sun sets on a smoke filled gully at Djurika ©Matthew Abbott



Rock art depicting European objects and people is termed contact art, offering a glimpse into colonial events, experiences and encounters from an Indigenous perspective. This spectacular and well preserved contact painting of a ship is located at a site in the Ngalngbali clan estate in the north of the IPA ©Matthew Abbott

REPORT FROM THE CEO



When I arrived at Warddeken in February of this year, the IPA had just been shut down with COVID-19 finally arriving in the NT. On top of strict Commonwealth measures, Warddeken had implemented additional controls to protect homeland communities while still delivering on core works programs. I expected the company to be operating at a limited capacity due to these restrictions but soon discovered a tenacious, resilient team who had found creative ways to ensure Warddeken's land management and cultural heritage projects continued with minimal disruption.

When the restrictions finally lifted, I travelled out to the IPA and saw the magnitude of what Warddeken can deliver. In May, 60 Landowners, rangers and support staff embarked on a twelve-day long-distance bushwalk from Kurruwil to Makkalarl. Children and elders alike packed backpacks with supplies, pulled on new hiking boots and walked across the stone country, following a Bininj manbolh (traditional walking route) and lighting small, cool fires as they travelled. Warddeken's stone country bushwalks have always stood out as a remarkable feat, but what resonated with me was the

fierce determination and confidence of the group, matched by joy and excitement for what lay in the days ahead. To me, this event encapsulates what is truly special about Warddeken.

I have witnessed the talent and capability of our rangers, coordinators, project staff and dedicated partners many times since. The work of my colleagues has brought about such outstanding achievements as supporting Nawarddeken Academy to establish two more independent schools at Mamadawerre and Manmoyi, so children can now access full-time, quality, bicultural education across the IPA. The Daluk (women's) Engagement Program, which supports women to build skills and confidence to engage in ranger work, continues as a force within the company – this year 42 per cent of all hours worked were by women, the most equitable employment statistics in the company's history.

This year, Warddeken launched a new Plan of Management, laying out an ambitious roadmap for the next five years. The plan speaks to the determination and ambition of this organisation to continue building on the Warddeken's Professor's vision to bring people back to look after the stone country.

Finally, I would like to acknowledge the incredible contributions of my predecessor Shaun Ansell, who stepped down as CEO after eight years in the role. I have long respected and admired Shaun. Under his leadership Warddeken's impact and reach grew exponentially while continuing to stay true to the vision of Warddeken professors to bring people back to care for the stone country. Shaun leaves a legacy that he should be proud of – I certainly am proud to join the company he was so instrumental in building.

Nina Brown
CEO

BOBO SHAUN

Shaun Ansell finished up with Warddeken in February 2022, after eight years as CEO of the company. During his time in the role Shaun worked closely with the Warddeken Board of Directors to oversee the extraordinary growth and expansion of the company.

Shaun's ambitious and intelligent leadership was instrumental in Warddeken successfully delivering core annual works programs to a consistently high standard, and critical in establishing keystone programs such as the Kunwarddebim (rock art) and Mayh (native species) projects, a new ranger base at Mamadawerre, and the creation of a network of independent community schools across the IPA. Together, these programs have placed Warddeken at the forefront of the movement for ecological, cultural and social change.

From everyone at Warddeken, we thank you bulanj for the integral role you've played in building our company up to be what it is today.

'I've been a ranger with Kakadu and Warddeken for 35 years and in that time I've worked with more managers than I can count - Shaun Ansell stands among the best of them. Shaun's a born and bred Territorian who's lived with Aboriginal people his whole life and understands the bush. He's proven himself a leader of integrity and determination, and it's been a pleasure working alongside him on the board and witnessing Warddeken move from strength to strength under his leadership. Shaun, you should be proud of what you've achieved here at Warddeken and on behalf of the Board of Directors, we thank you.'

Fred Hunter



THE YEAR IN NUMBERS

Bininj (Indigenous)
Rangers Employed

280

Nawarddeken Members

443

Square Kilometres Managed

14,000

Wildfire Suppression
Late Dry Season
(Aug-Dec 2021)

53 fires controlled

60 rangers involved

Biodiversity Surveys

335 motion sensor cameras deployed **24** native mammals detected

32 native birds detected **8** native reptiles detected **4** new detections of priority species

Feral Animals

2,125 feral animals removed

1,822 mixed feral animals culled aerially **303** mixed feral animals culled on ground

Employment

280 Bininj (Indigenous) **29** Balanda (non-Indigenous)

Anbinik Isolate Forests

19 forests protected by on ground fire break **7** forests protected by targeted APB

Rock Art

10 clan estates included in survey and conservation works

14 sites conserved **57** new sites documented

Major Cultural Events

1 large bushwalk 60+ attendees **1** small bushwalk 18 attendees **2** daluk and culture camps

6 rock art and culture camps **4** biodiversity and culture camps **1** kangaroo fire-drive

300+ participants across all events

Prescribed Burning
Early Dry Season
(April-July 2022)

16,311 km APB **106** Landowners consulted

1,288.8 km on ground burning

MAYH NATIVE SPECIES

The unique fauna of the Warddeken IPA is important to Bininj as totemic beings, key figures in creation stories, food, the subjects of ceremonial songs and as co-inhabitants of the Kuwarddewardde's living landscape. Many of the threats to healthy country are also a threat to native mayh, and the interaction of these threats is contributing to the decline of many important species. Such threats include inappropriate fire regimes, impacts of feral species (feral cats, cane toads, and herbivores), weeds and wildfires. Warddeken has undertaken management works to reduce these threats to country, people and mayh, and in 2017 established a biodiversity monitoring program which is the foundation of understanding the impact of our land management practice and programs within the IPA.

In the face of ongoing mammal declines across northern Australia, this long-term monitoring program is helping us develop targeted programs and management actions for priority species, and the sustained local support for the project is a testament to the aspirations of Nawarddeken people to conserve mayh and the biocultural heritage of the stone country.

The Mayh Species Recovery Program aims to continue to deliver best practice collaborative works with rangers and Landowners and remains committed to establishing two-way ecological research. In addition to working at the forefront of ecological research, the program continues to generate strong engagement and employment of Landowners and rangers, as well as producing a host of cultural knowledge resources and learning opportunities, ensuring that the positive outcomes of the program extend far beyond the purely scientific.

A family of yirlinkirrkirr (white-throated grasswrens), a priority threatened and endemic species Warddeken is working to protect. Photo courtesy of Kelly Dixon.





Clockwise: Bessina and Cammie Wood deploy motion sensor camera traps to be left out for three months, capturing photos of any passing animal during this period.

Jai Nabalwad sets a camera at the right height and angle to best capture passing animals.

Cammie Wood negotiates the rocky landscape of the IPA while conducting vegetation assessments.



Warddeken IPA Biodiversity Monitoring Program

The impacts of COVID-19 were felt at the beginning of 2022 with Delta and Omicron first appearing across the NT, and paramount to Warddeken was limiting the spread into homeland communities. One of the fundamental elements of monitoring programs is that activities take place at the same time of year, so it is important that cameras are placed out at the same seasonal time. In February and March when our camera deployments take place, Warddeken had strict isolation requirements for staff to stop the spread of the virus into vulnerable communities. The Mayh Program was therefore unable to operate at capacity, meaning some Landowner consultations took place over the phone (conducted by Elizabeth Nabarlambarl) and many Landowners were unable to travel to location for the monitoring work. Despite these limitations, at least one Landowner or Djungkay participated in the monitoring fieldwork at each clan estate. A total of 38 sites across five clan estates were surveyed involving Landowners and rangers from Kabulwarnamyo, Manmoyi, and Mamadawerre.

- March brought scorching conditions and heatwaves, and a team of young rangers worked incredibly hard to complete the deployment of cameras across the clan estates. Some of the highlights of the year include:
 - At Kabulwarnamyo, Penny Yibarbuk, Tahnee Nabalwad, Esmond Wood and Frankie Nadjamerrek worked every single day of the deployment on Barradj estate. They also helped instruct the new base coordinators and were fully responsible for the motion camera set up at a total of 12 sites
 - From Manmoyi, young rangers Cain Naydwana, Canon Manyita, George Watson and Derek Guymala took the lead on Wurrbbarn estate, creating robust fire breaks in the annual grass
 - Cammie and Besilina Wood travelled on foot between riparian sites in the searing heat, at one point having to quickly hide from angry buffalo amongst the paperbark trees!
 - At Madjdjalum estate, rocky sites were often traversed vertically with some rewards of various flowering plants used as pink/purple colour for dyeing pandanus and two sightings of alyurr (Leichhardt's grasshoppers)
 - Based out of Mamadawerre, the survey team for Warddjak Kundjikurdubuk and Warddjak Maburrinj estates included older Nawarddeken Academy students supervised by senior daluk rangers, to learn about the program and how to deploy cameras. Whilst walking through the escapement Tinnesha Narrorga and Maureen Namarnyilk spotted a Kimberley rock monitor basking in the sun!

This year to assist with processing camera images, new technology has been utilised to remove empty images from our dataset, allowing the team to only focus on identifying pictures of mayh. This makes an enormous difference to image processing, reducing the overall number of images needing to be assessed by over 75 per cent. Rangers did a fantastic job of independently processing the 67,000 images of mayh collected during biodiversity surveys in four months. This will allow us more time to understand the data we are collecting, where mayh are located within the IPA, and what we can do to best manage country for them.

Warddeken IPA Biodiversity Monitoring Program

- 5 clan estates
- 4 face-to-face consultation with Traditional Landowners
- 11 phone consultation with Traditional Landowners
- 190 camera traps
- 23 native mammals
- 8 feral species
- 8 native reptiles

Species recovery on Barradj clan estate

During a four-day camp in August 2021, with the landowning Yibarbuk family and key rangers, 100 cameras were deployed across four habitat types on Barradj clan estate – spring, riparian, woodland and rocky outcrop. Deployed via walking, quad bike and helicopter, cameras were spaced 400 metres apart to help understand the density of budjiked (feral cats) around threatened mayh (native animal) communities. The camera density grid fieldwork required extensive navigation using GPS to move between camera stations and program support staff assisted rangers in practising with the different handheld GPS units. By the end of the camp, two daluk rangers, Treanne Nalorlman and Penny Yibarbuk were independently operating and navigating between camera stations.

The methods of the camera density grid were designed with all data recording to be completed on the Cyber Tracker app; as a result of designing the program with this user-friendly software, a full daluk ranger team deploy cameras independently of support staff. Lorina Maralngurra, Treanne Nalorlman and Tahnee Nabalwad together lead a team, deploying over fifteen cameras independently. After eight weeks, cameras were retrieved and all the images were transferred to our bilingual database for daluk rangers to systematically process over the wet season.

Four feral cat identification workshops were run at Kabulwarnamyo and Manmoyi, where daluk rangers identified to an individual level the cats inhabiting Barradj Clan estate. The first trial of feral cat identification was a major success, with daluk from both communities showing an aptitude for recognising individual cats. Kabulwarnamyo daluk identified the same 12 individuals as the Mayh Recovery manager, whilst Manmoyi daluk identified nine out of 12 individuals. Feral cat identification is often challenging and the standard scientific process requires two individuals to identify cats, before reconciling differences in opinion. Having daluk from two communities and the Mayh Recovery manager identify feral cats separately and then discussing differences in opinion in the second round of workshops, ensured that daluk are engaging in a robust scientific process. This method ensures accurate data will inform the analysis of the feral predator density grids, which will be used for targeted feral cat management strategies, such as introducing the use of the Felixer traps.

As part of activities conducted under the Australian Government's Environment Restoration Fund, in May a four-day camp to deliver targeted fire management activities was held on Barradj Estate in the south of the IPA. Informed by the data collected from the camera density grid in late 2021, targeted fire breaks were installed explicitly to protect white-throated grasswren habitat. Members of the Yibarbuk family travelled from Gunbalanya and Maningrida to attend the camp, conducting bushwalks to create finer-scale fire breaks to complement the strategic aerial burning in the area.

Warddeken hopes to continue and expand focused, adaptive, fine-scale fire management with Landowners in areas of the IPA where threatened species have been recorded, to better understand the types of interventionist action that is needed to foster populations of threatened stone country fauna.



Mayh Recovery Program Barradj Clan Estate

100 camera traps

54 native mayh

11 identified individual budjiked (feral cats)

7 Landowners involved

Strategic on-ground and aerial burning for threatened mayh

Top to bottom: Recain Nabalwarl during a feral cat identification workshop at Manmoyi, where rangers were able to identify individual cats captured on motion sensor cameras.

Tahnee Nabalwad and Penelope Yibarbuk set out cameras on Barradj clan estate.

A feral cat with a native glider in its mouth, as captured on one of the traps set out during the predator grid survey.

Bottom right: Tinnasha Narronga and Alexandria Namarnyilk set up a songmeter to learn more about the population of yirlinkirrkirr in the IPA.

Yirlinkirrkirr (White-throated grasswren) Surveys

In partnership with Territory Natural Resource Management (TNRM), a specialised project was undertaken to learn more about populations of the shy, elusive and endemic yirlinkirrkirr (Amytornis woodwardi). Consultations with Landowners from nine clan estates were undertaken, however, due to COVID-19 restrictions, Warddeken rangers performed all fieldwork components, using songmeter recording microphones alongside other technologies.

Sites were selected using a combination of predictive habitat suitability modelling, cultural knowledge of fine-scale habitat preferences, and past sightings of birds on bushwalks. As this was a new project, surveys were completed at four communities (Manmoyi, Kabulwarnamyo, Marlkwawo and Mamadawerre) and due to the restrictions of travel and isolation at the time, we focused on clan estates where Landowners were already present in the community. The project supported as many rangers as possible to participate in the new surveys, learn new skills and get out on the escarpment to visit new areas of country.



Yirlinkirrkirr are difficult to survey, and one focus of this research was to try and determine the type of method best used to detect yirlinkirrkirr. The project used motion sensor cameras, and a recording microphone (also called a songmeter), and when retrieving the gear call-back surveys were conducted, playing the call of the yirlinkirrkirr to see whether the birds come out. This involved a combination of familiar skill sets (using cameras) in a different application. Rangers set up cameras in a square formation, ensuring the camera display focused on the ground level to capture good photos of grasswrens. Together, the team learnt how to install a songmeter to record all the sounds in the area, and to pick up specifically on bird calls. Multiple pairs of yirlinkirrkirr were discovered on Barradj clan estate, and their call was used to train machine learning to pull out the call from other songmeters. After this machine learning was developed by TNRM and partners, they were able to find yirlinkirrkirr calls at two other sites on Bordoh and Mok country! This shows that for yirlinkirrkirr, the best method to detect whether they are at a site may be songmeters rather than cameras or surveys involving people walking around.

Warddeken will continue to update Landowners when new populations of yirlinkirrkirr are detected, allowing them to be considered in fire planning, as the birds prefer long-unburnt country. It is hoped that hope this partnership with TNRM and other land management groups in the stone country will develop strong distribution models so Warddeken can adapt management practices to provide appropriate amounts of long-unburnt habitat in the Warddeken IPA to support populations of yirlinkirrkirr.

Yirlinkirrkirr

9 clan estates

17 face-to-face consultation with Traditional Landowners

3 phone consultation with Traditional Landowners

45 cameras

9 clan estates

Yirlinkirrkirr detected at 3 sites

KUNMAYALI KNOWLEDGE KUNWOK LANGUAGE AND DJANG SACRED SITES

Nawarddeken Landowners are firm in their belief that customary knowledge and language are the vital components of managing country, and that caring for the multitude of sacred places across the IPA is of the utmost importance. Kunmayali encapsulates intangible knowledge as wide-ranging as creation stories, the complex layers of kinship that define and give order to social life, the names and stories of thousands of individual sites, and intimate knowledge of the physiology and behaviour of stone country macropods. Kunmayali also encompasses practical skills like navigating the Kuwarddewardde using landscape and environmental cues, making items of material culture, and performing cultural rituals such as increase ceremonies.

Not only do Landowners want to document their knowledge and languages for posterity, but they also want to see younger generations enthusiastic about learning. Kunmayali and kunwok flow through all aspects of life on country, and performing cultural responsibilities and practices such as visiting djang, burning according to tradition and lore, collecting bush foods and preparing bush medicines, enacting the ceremonies and performing increase rituals ensures that

- 50+ culture, language and site focused events
- 300+ participants across all events
- 1 large bushwalk 60+ attendees
- 1 small bushwalk 18 attendees
- 2 daluk and culture camps
- 4 biodiversity and culture camps
- 1 kangaroo fire-drive

Opposite top: On the 2022 stone country bushwalk walkers visited Kurdukadji Dedjbarlkarrhmeng, an important Emu Djang (Dreaming site) widely known throughout west Arnhem Land. The site consists of a stone arrangement in the shape of an emu which has been in this location since the Dreaming.

Right: Penelope Yibarbuk, Bessina Wood, June Nadjamerrek and Tahnee Nabalwad with one of the biggest ankurrudjumuk roots they had ever seen. The roots are crushed and boiled to dye pandanus fibre used in the manufacture of baskets and dilly bags.



culture remains strong and that the Kuwarddewardde remains healthy. For this to happen, young Nawarddeken must authentically connect with the knowledge being offered to them by their elders, and Warddeken's role is to facilitate programs and events that meet this goal.

Customary knowledge and practice are interwoven throughout the work program delivered by Warddeken rangers. This can include lighting fires at the right time of year in favourable weather conditions, understanding the key habitats and behaviours of endemic fauna species and being aware of the location of sacred sites while undertaking roadwork. In almost every way, kunmayali is an integral component of how Warddeken rangers manage the Kuwarddewardde.

Additional to prioritising knowledge in the ranger work program, Warddeken facilitates dedicated cultural events, designed and led by Bininj, which centre around priority aspects of knowledge, language and sacred place protection. In the coming years, we hope to fund a dedicated project to focus entirely on the enormous and urgent task of safeguarding the customary knowledge essential to managing the Kuwarddewardde.

Some of the outstanding activities centred on documenting and transmitting customary knowledge and skills this year include a long-distance stone country bushwalk, a kangaroo fire-drive, a bush string workshop that brought out the inner child in our most revered professor, and peer-to-peer training and mentoring in signposting cultural sites.



Below: Bush string was an essential item of material culture for Bininj, used for a range of utilitarian and cultural purposes.

Right: Rhonda Nadjamerrek and other educators had a wonderful time recalling the 'cats cradle' string games of their childhood.

Bottom right: Mary Kolkiwarra enthusiastically led a learning session for students... and ended up getting more excited than the kids!

Bottom left: Penelope Yibarbuk harvests manbudbud (*Brachychiton paradoxum*) to make string from the tree's bark.



Bush string workshop

Bush string was a staple of Bininj life before settlement, used for affixing spear tips and stone axe heads or for weaving string bags, amongst other things. The string was also used by Bininj children to play games, similar to those played by children all over the world, where one's fingers are used to manipulate a tied length of string to make the shape of various objects. Some of the shapes made by children in the Kuwarddewardde include djorrkkon (rock ringtail possum), kalawan (goanna) and kunj (kangaroo).

One of the themes explored under the Nawarddeken Academy's Kuwarddemalkno (seasonal calendar) Curriculum is what life was like for children in the Kuwarddewardde pre-colonisation, and in developing learning activities for this topic, string games were suggested by cultural advisors as an engaging way to educate students. Over the wet season, daluk rangers worked with students to learn how to identify and harvest the correct plants to make bush string, and how to prepare the string by rolling it on their thighs. The learning culminated in a thoroughly enjoyable workshop led by Mary Kolkiwarra Nadjamerrek, who taught students and adults alike to create a whole range of string animals using their fingers, just as she had once done with her family while she was growing up. Nawarddeken Academy was filled with animated conversations and laughter as Mary and the women of Kabulwarnamyo relived the games of their childhood.



Place Name Project

The Place Name Project is led by senior ranger Terrah Guymala from the Manmoyi ranger base, and for the last five years has been the primary vehicle for promoting knowledge of the hundreds of named sites throughout the IPA. Through the production and installation of signage on clan estates accessible by road, the project actively encourages the use of these names in the management of the IPA. A digital database is also maintained by Terrah, with plans to merge this with Warddeken's Bidwern archival database in the coming year.

This project is one of Warddeken's many efforts to make knowledge and language more visible across the IPA and to vigorously promote their use in the workplace, in recognition of the fact that knowledge is more likely to be absorbed across generations if it's being used on a day-to-day basis. Terrah comments that since the Place Names Project started, he is noticing more people using the correct, specific names of places (rather than just the more commonly known sites), and also that a much wider range of place names are being used by younger people. This is powerful, demonstrating the impact of supporting and resourcing locally-designed efforts to conserve unique stone country knowledge systems.

Maintenance of existing signs and the installation of new signs has taken place throughout the IPA during the year, especially around the Bordoh, Djordi, Rol and Kurruik clan estates in the Manmoyi region. With increased interest in the project at other ranger bases, Terrah has been preparing a peer-to-peer training model, and in 2023 will run workshops at Mamadawerre and Kabulwarnamyo to support the expansion of the project into other regions of the IPA.



Kunwok dja mayh (Languages and animals)

With a keen interest in technology, ranger Tahnee Nabalwad took the lead in a project focused on digitising Warddeken's Mayh (Animal) Identification database, to create a trilingual learning resource for schools and the wider community. The project includes recording audio in English, Kunwinjku and, importantly, the lesser-spoken language of the stone country Kundedjnjenghmi. Tahnee has worked with her aunties June and Lois Nadjamerrek and her grandmother Mary Kolkiwarra Nadjamerrek to capture audio of various stone country fauna.

This important work will continue throughout the year, and Tahnee and other rangers with an interest in information technology are being supported to build their skills and encouraged to design and create other resources for use by rangers and students at Nawarddeken Academy. This work is happening in partnership with educators at Nawarddeken Academy, with a goal of creating a collection of digital resources to support the delivery of the Kuwarddemalkno (seasonal calendar) curriculum.

Bottom left: Place Name Project manager Terrah Guymala facilitates a peer-to-peer training session for daluk rangers.

Bottom right: Tahnee Nabalwad records her grandmother Mary Kolkiwarra discussing stone country animals and the various language names for each species.



Kangaroo fire-drive

Fire-drives were once major hunting events carried out in the Kuwarddewardde and brought together families and clans to feast on macropods, the primary protein source. Since the depopulation of the plateau fire-drives have become rarer and rarer, with rangers estimating that less than five have been carried out in the last decade (one of which was facilitated by Warddeken in 2012).

Fire-drives require a unique set of skills and knowledge, including:

- Knowledge of manbambarr sites within the landscape, dead-end gullies that are suitable for trapping fleeing kangaroos
- Skills to make mankabo (spears) and borndok (spear throwers)
- Advanced planning to ensure enough fuel remains at the manbambarr at the right time of year to perform the burn
- Adherence to behavioural protocols in the lead-up to the hunt
- A coordinated, strategic approach to the hunt itself with individuals performing their delegated roles.

In one of the year's highlights, 30-plus Bininj came together in wurrkeng (July) for a kangaroo fire-drive at a renowned manbambarr called Namilewohwoh, near the Mann River on Djordi clan estate. Much preparation went into this major cultural event, with Bininj and yawurrinj (young men) from Manmoyi working over many months to craft spears and spear throwers.

Rangers planned and executed a carefully managed fire regime around the fire-drive gully, leaving plentiful cured grass to burn during the drive, and also installing breaks to ensure the fire didn't become out of control (fire-drives are often held in the late dry season). In the lead-up to the event, senior ranger and cultural advisor Terrah Guymala studied archival audio recordings of late professors to learn the various morrdjjanjno (ritual hunting/increase songs) for individual macropod species and was able to perform these specialised songs before the hunt, the first time these endangered songs have been performed as part of Warddeken's work program.

Despite the intense preparation, participants were disappointed that no kangaroos were killed in the event itself. Senior rangers and Landowners, however, declared the event a success and have already commenced discussions about how to improve on the delivery in 2023, including by providing better teaching opportunities to young men about protocols of the hunt, such as ensuring spears remain resting horizontally on the ground pre-hunt, to ensure no animals or spirits can see them.



Top: Marshall Bangarr, Cain Naydwana and Jamie Billis with borndok (spear throwers) and mankole (spears) made in the lead-up to the kangaroo fire-drive.

Bottom: Rangers supported students to learn the specific skills and rules associated with fire-drives.



30 Bininj rangers, yawurrinj (young men) and Nawarddeken Academy students came together for a major hunting event, with senior men teaching participants the skills and cultural protocols associated with kangaroo fire-drives.

Stone Country Bushwalk

One of our highlights this year has been following a Bininj manbolh (traditional walking route) through the north of the IPA, in a major cultural event involving 50 rangers, Nawarddeken Academy students and their families. The walk aimed to spend time on country rarely visited due to remoteness and to introduce young Landowners to their clan estates.

After the success of a smaller walk in 2021, Landowners and rangers from the Mamadawerre base decided that in 2022 they wanted to undertake a bigger bushwalk traversing the kakbi (northern) region of the IPA. The group completed a 12-day long-distance bushwalk, travelling 55 kilometres from Kurruwil to Makkalarl in yekke (early dry season), in a collaboration between Warddeken, The Nawarddeken Academy and Marrawuddi Arts and Culture.

For some Landowners, it was their first time visiting certain areas of country; others had walked this Bininj manbolh many years ago, and were able to share these stories with their own children. Senior ranger Zacharia Namarnyilk recalled walking this route with his father and was proud to now do the same with his son Bundy. At one campsite, Zacharia was excited to discover cuts in the trunks of trees – marks left there by old people.

Held in May, the bushwalk was the perfect opportunity to commence the years' burning, with small fires being lit along the length of the walking route. Camping at each location for two to three nights allowed time to hunt and harvest bush food as family groups, particularly at the many bountiful freshwater sites. Fish, turtle, waterlily corms and other plant foods were supplemented by fresh buffalo meat, which was provided by rangers.

A highlight of the walk was visiting Kurdukadji Dedjbarlkarrhmeng, one of the most important and famous Emu Djang (Dreaming) sites in west Arnhem Land – a stone arrangement in the shape of an emu that has been in this location since the Dreaming, when Kurdukadji (Emu) placed herself here. Despite its renown, this remote site is today highly inaccessible, situated atop an escarpment, only reachable by hiking or helicopter. Warddeken supported Landowners unable to participate in the walk to fly in by chopper, meeting the group of bushwalkers at the site. In this group were three generations of Maburrinj

Traditional Owners: Thomas Badari, his son Asher and three grandsons – none of whom had visited the site before. At the site, Landowners fulfilled extremely important cultural obligations – rearranging stones that had become dislodged over the years back into the emu shape and performing an increase ritual involving whipping the stones with a branch and calling out the names of places they wanted to see emu numbers increase.

Landowners were joyous and emotional to be reunited with the site or to be visiting for the first time, and many tears were shed – it was an emotional reconnection of people with country.

Other highlights of the walk included harvesting delek (white ochre) at Maburrinj, one of the major delek mines on the plateau, discovering new kunwarddebim (rock art) sites, and having important intergenerational conversations about land and cultural management practices that should be used to protect these specific areas of country. The event was a major logistical feat, made well worth the effort by the overwhelmingly positive response from all who participated.

Stone country bushwalks are an opportunity for Landowners to reconnect with country in some of the more far-flung regions of the IPA, as well as to light small, patchy fires that mimic the burning patterns of previous generations.



Top: Stone country bushwalks are often the first time children and young people are able to visit clan estates with which they have cultural ties.

Bottom: Conrad Maralngurra demonstrates to children how to crush and apply delek (white ochre or clay).

Top right: Zacharia Namamyilk lets his son Bundy talk to another group of walkers on the radio.

Bottom right: The group of excited walkers at the beginning of the walk at Kurruwil.





Far left: Lorna Nabalwad shows Agnes Gumurdul how to prepare and cook modjdjarrkki (freshwater crocodile), a favoured bush food.

Left: Bushwalkers move through the rocky outcrops, looking for rock art as they travel.

Top right: Delek (white clay or ochre) harvested from one of the largest deposits on the Arnhem plateau at Madjangalkku.

Bottom right: During the bushwalk students learned bush skills such as carrying fire – old people would carry the smouldering branch as they walked, so fires could easily be lit when they arrived at a new campsite.





Conrad Maralngurra sets alight cured spear grass in the open savanna woodlands around Mamadawerri ©Matthew Abbott

FIRE MANAGEMENT

MANWURRK

1,288.8km on ground burning
16,311km aerial burning
106 Landowners consulted

For millennia, Nawarddeken have used fire as a tool to manage country to their benefit, and the ecology of the Kuwarddewardde expresses this imprint in many ways. Historically, landscape-scale burning was accomplished as people moved across country in yekke (early dry) and wurrkeng (mid dry), lighting small fires throughout the landscape as they walked. On ground burning remains a core component of Warddeken's annual fire management program, complemented by strategic aerial burning to establish a network of fine-scale and targeted fire breaks across the IPA. Over many years, Warddeken has built on the strong foundation of customary burning knowledge laid out by elders and professors, to establish a fire management program that draws on the dual toolboxes of traditional lore and contemporary science, whilst also providing a robust income stream through engagement in the carbon economy.

After the widespread depopulation of the plateau in the 1960s, large wildfires dominated in the absence of dry season burning patterns and devastated the region. In 2002, under the guidance of Bardayal and other professors, Warddeken reintroduced Indigenous fire management practices to the region, playing a central role in the development of the pioneering West Arnhem Land Fire Abatement (WALFA) Project.

Through implementing a combination of traditional and modern fire management techniques – primarily conducting prescribed burns in the early dry season and wildfire suppression in the late dry season – Warddeken rangers have stabilised the fire regime of the Kuwarddewardde, in turn protecting the environment and cultural heritage sites and reducing greenhouse gas emissions.



Above: A small burn which will go out overnight with the cool temperature and dew of the early dry season ©Matthew Abbott

Right: Jason Nabulwad and Camilla Lindjewanga observe the small, cool fires lit on dusk during the 2022 bushwalk. Jason carried a clutch of spears the duration of the walk, which allowed men and boys to practice customary hunting skills along the way ©Matthew Abbott



WALFA Project

This strategic landscape-scale fire management underpins the ground-breaking WALFA Project where industry, government and Indigenous ranger groups work in partnership to offset greenhouse gas emissions. Initiated in 2006, the WALFA Project saw ConocoPhillips and Darwin Liquefied Natural Gas work with the Northern Territory Government to fund the fire management activities of five ranger groups across 2.8 million hectares to produce an annual offset of 100,000 tonnes of greenhouse gases.

In the 17 years since WALFA's inception, Warddeken and other project partners have built internal capacity to deliver broadscale fire management, also demonstrating the positive environmental, cultural, social and economic benefits that arise from good fire management practice. The success of WALFA has also seen carbon abatement exceed expectations, with over 2.8 million tonnes of greenhouse gases (also referred to as 2.8 million Australian Carbon Credit Units or ACCUs) abated to date.

Excess emissions avoidance credits are marketed through the Indigenous-owned, not-for-profit company ALFA (NT) Limited, of which Warddeken is a partner. Sales of ACCUs have led to substantial locally generated revenue being reinvested into the ranger groups who manage the WALFA Project.

2022 Early Dry Season Burning

At the beginning of each year, senior Warddeken staff conduct widespread Landowner consultations to gain consent and feedback regarding the operationalisation of our early dry season burning program.

Fire consultations commenced in March 2022. Due to the risk of spreading COVID-19, a majority of consultations were conducted via phone. A total of 106 Landowners were consulted in the development of the Warddeken 2022 fire plan.

Strategic on ground burning is performed wherever possible throughout the IPA, particularly along roadsides and hunting tracks. Rangers undertake ground burning from a 4WD vehicle or by foot, and use either a drip torch or matches as the ignition source. Ground burning is also utilised to protect environmental assets such as anbinik rainforest isolates and stands of anlarrh (fire-sensitive native cypress), as well as cultural sites including kunwarddebim (rock art galleries) and djang (dreaming sites). In early May, nine rangers conducted a small bushwalk, travelling 9 kilometres in the Bordoh estate from Milerrelerre to Mirelk to conduct ground burning. In 2022, on ground burning was performed across 1,198 kilometres of tracks and roads within the IPA.

Aerial prescribed burning (APB) is a modern fire management method; however, time has proven that rangers and Landowners are easily able to transfer their knowledge of country and fire behaviour to an aerial approach. Advances in APB technology allow for adjustments to the delivery rate of incendiaries, meaning APB can be customised to deliver very specific burning results, which take into account weather and fuel conditions for different environments in the landscape. Warddeken now has a team of experienced bombardiers, and as a result, the majority of APB across the IPA is now undertaken solely by senior rangers and Landowners. This year, burning took place between April and June 2022 with a total of 16,311 kilometres of flight lines recorded from 45 flights out of Mamadawerre, Manmoyi, Kabulwarnamyo, Jabiru and Gunbalanya. As part of standard operations, rangers and coordinators continued to record flight tracks during Aerial Prescribed Burning with handheld GPS and android tablets. This information has been sent to ALFA as part of ongoing participation in the WALFA project.

The 2021 ALFA post-fire season meeting was cancelled in November 2021 due to an unacceptable risk of COVID-19 spread. In April 2022, seven Warddeken rangers and two support staff participated in the 2022 ALFA pre-season fire meeting at Barapunta hosted by Mimal Land Management.

A new component of the fire management program was undertaken in partnership with the Mayh Species Recovery Program. Through their research, Warddeken has identified areas to concentrate on fine-scale management works for fostering priority threatened species. Rangers and Landowners from the Yibarbuk family undertook careful ground burning in Barradj clan estate, specifically to create fire breaks around djabbo (northern quoll) and yirlinkirrkirrkir (white-throated grasswren) habitat. A large wildfire burnt through the Barradj estate in 2020, and these fire breaks will help increase the vegetation age in these species' habitat, whilst also managing for future intense wildfires.

Training

This year, Mark Desailly from ALFA NT delivered custom, accredited units of training in Helicopter Safety and Operate Incendiary Equipment in an Aircraft (Bombardier/Raindance machine). For some of our up-and-coming rangers ALFA's mode of training – delivered within the context of our ranger work program, and with a focus on genuine confidence-building and skill acquisition – has been immensely valuable.

Some of our most proficient bombardiers now hold nationally accredited units of competency thanks to ALFA (NT), whose model of training recognises their years of experience delivering aerial burning across the Warddeken IPA. ALFA's custom training program built on our rangers' experience by enhancing their skills in the delivery of prescribed burning as the work activities were happening. A huge thank you to our long-time friend Mark Desailly from ALFA for delivering the training.

Rock art and early burning

This year at the North Australian Savanna Fire Forum, Warddeken Landowners and rangers talked about how and where good fires can be lit to protect rock art shelters. The video presentation described the mapping and technology currently used by rangers and support staff to collect and display complex information about land management strategies to prevent uncontrolled fires that can destroy precious art, including fuel build-up clearance and early burning. The video also recounts customary stories around patch burns at shelters, and seasonal clues telling people when it's time to burn, where and why it is important to do so for Bininj. It was great teamwork, with rangers from all three bases enthusiastically recording segments for the video.

From left: Young people across the IPA are taught at an early age to have a respectful relationship with fire, as well as the practical elements of early dry season burning ©Matthew Abbott

Helicopters are essential in delivering fire management to inaccessible regions of the IPA ©Matthew Abbott

Lindsay Whitehurst, Jai Nabalwad and Greg Lippo work together to plan aerial and ground burning tracks around Kabulwarnamyo.





ANBINIK

ALLOSYNCARPIA RAINFORESTS

Anbinik (*Allosyncarpia ternata*) forests are endemic to the west Arnhem plateau; once the dominant ecosystem of the Kuwarddewardde, these large, broad canopied, shady trees are relictual species, primeval ancestors of today's eucalypts. Bininj considers Anbinik important for their contemporary ecological status, as well as the cultural importance they held for old people, who valued the forests for the shade and shelter they offered, and actively managed them using fire.

Anbinik forests are slow-growing and fire-sensitive, and with the depopulation of the Kuwarddewardde were left vulnerable to wildfires, leaving entire stands of forest destroyed. Today, anbinik is primarily restricted to the deep gorges and rugged escarpments of the plateau, where they are protected from fire. In the savanna woodlands, small isolate forests persist and are dependent on active and ongoing management and protection from wildfire. Old people maintained these patches through careful fire management, a practice now reinstated by Warddeken.

Within the IPA there are a number of 'at risk' priority anbinik forests that are visited and cared for annually through a dedicated Anbinik Management Program which involves maintaining existing mineral earth breaks surrounding entire stands of forest and performing cool backburning from these breaks. For numerous other sites across the IPA, rangers perform targeted aerial prescribed burning in the immediate vicinity of the forests, to offer protection from wildfires through strategic early burned breaks.

In bangkerreng (late wet season) and yekke (early dry) 2022, a total of 26 anbinik isolate forests were managed. 17 isolates had mineral earth breaks installed, and were burnt around from the ground in the late afternoon or cool evening. This physically demanding job involves manually clearing more than 20 lineal kilometres of mineral earth breaks, using brush cutters, chainsaws and leaf blowers. An additional two sites had mineral earth breaks installed, but due to time restrictions were not burned from the ground – instead fire management was undertaken from a helicopter in early May. A further seven sites were targeted for strategic aerial burning in early May under mild conditions.

After more than a decade of delivering the Anbinik Protection Program rangers are seeing positive ecological outcomes in terms of forest regeneration and canopy cover; just as importantly, it has generated strong cultural learning outcomes, with senior rangers, cultural leaders and elders reporting that the younger generations are becoming knowledgeable about the species and how to manage it using customary techniques.

- This important work must be continued in perpetuity to ensure the ongoing protection of Anbinik forests. Under the new Plan of Management, Warddeken's goals for this project are to:
- Increase the number of managed at-risk forests from 15 to 25
 - Develop and implement a largely automated satellite monitoring program to demonstrate the efficacy of our management works
 - Develop and deliver a custom unit of learning for Nawarddeken Academy, to be taught annually in bangkerreng (late wet season) when management work is undertaken
 - Work with elders and senior cultural advisors to document links between Anbinik, songlines and ceremony.

Daluk rangers played an integral role in this year's Anbinik Protection Program, creating and maintaining over 100 kilometres of fire breaks around Anbinik forests ©Matthew Abbott

“I have to tell a story about Anbinik. That Anbinik was there before we were born; before the old people were born. Now the old people tell us we all have look after that Anbinik. Now the younger ones have to look after the Anbinik.”
- Doreen Nayilibidj

- 19 Anbinik forests protected through on ground management
- 36 kms of fire breaks installed/maintained
- 7 forests protected by targeted APB



Left: Anbinik are the tallest and oldest trees to grow in the Kuwarddewardde. Important for the shade they offered old people, forests were managed through the use of cool early dry season fires. Warddeken is replicating this management regime through the Anbinik Protection Program ©Matthew Abbott

Above: The fire break surrounding these two Anbinik patches can be seen clearly from the air ©Matthew Abbott

KUNWARDDEBIM

ROCK ART

Hazel Wachope joined the survey team at Marlkawo – the first time she had participated in formal cultural heritage work. During the survey camp many sites were documented for the first time in an event involving elders, rangers, students and families.



Painted in ochre on the walls and ceilings of shelters across the rocky expanse of the Warddeken IPA are the stories of Bininj Nawarddeken, told across thousands of generations. This artistic and spiritual legacy represents one of the oldest and most significant collections of cultural heritage anywhere in the world, and the Kunwarddebim Rock Art Project has steadily been empowering and resourcing Bininj to design and deliver a cultural heritage plan based on their priorities to protect bim.

Since Warddeken's inception, opportunistic rock art surveys and site conservation and maintenance works have been a feature of the work program, however, Landowners were clear in their desire to do far more to document and care for their bim. 2019 was a turning point in Warddeken's rock art operations, with the Kunwarddebim Project formally commencing after a two-year pilot phase.

Through this project, we have set ourselves the ambitious goal of working with Landowners to strategically survey the entire IPA, documenting and conserving art sites in the process. While we have a long way to go, steady progress is being made and the project continues to engage Bininj, reconnecting clans and Landowners.

What sets the Kunwarddebim Project apart in the field of heritage conservation is an unwavering commitment to running a program centred around honouring Bininj's connection to rock art and a belief that they are the rightful people to be making decisions regarding the way to document and care for these sites.

The rock art project officer works alongside rangers and Traditional Owners using a customised methodology of surveying and mapping kunwarddebim and directing a rigorous program of site conservation and protection. During the reporting period, rangers and rock art project officers conducted surveys and maintenance of rock art sites in the Badmardi, Bolmo Marlkawo, Ngalngbali, Mok, Djordi, Djalama, Madjawarr, Wurrbbarn, Bolmo Dedjrungi and Wurnkomku estates. This included the survey of 267 new sites and the maintenance of 14 existing sites. Priority at-risk rock art sites at Marebu (Djordi estate) and Kudjekbinj (Ngalngbali estate) were also fenced to protect lower panels from being rubbed on and destroyed by feral buffalo and pigs, and in some instances, native macropods.

Catherine Ralph is Djungkay for the Bolmo Dedjrungi estate in the west of the IPA, and has shown great aptitude and enthusiasm for all aspects of rock art surveys.

Overall (2018-2022)
284 sites surveyed
19 clan estates

This year:
86 new sites explored
80+ Landowners engaged
10 clan estates
6 camps
3 maintenance and conservation events



Birdibim, or beeswax art, is a rare style of rock art where the artist has used the wax of native bees to make designs or figures. This well-preserved birdibim depicting a mimi spirit was documented during a survey at Kabbari.

Rock art protection and story-telling – supporting people to return to orphaned country

The Warddeken Plan of Management lists two of the main direct threats to kunwarddebim, 'empty country' and 'loss of Bininj knowledge and languages'. This year Landowners and rangers expressed a keenness to spend more time in orphaned country to record rock art and its associated knowledge, stories and vernacular as a way to pass on customary lore intergenerationally. With this in mind, this year the Kunwarddebim Project doubled the original goal of visiting five clan estates per year, as well as significantly increased Bininj engagement, with more than 80 Landowners, Djungkay and rangers involved in the program. This extraordinary effort has connected many Nawarddeken with their country and cultural heritage, increasing both the amount and quality of time spent on country.



Clan: Madjawarr

Location: Kurruwil/Kubokodj
1 survey camp
20 bim sites

In March 2022 a survey camp was held on Madjawarr clan estate, with Landowners Rosemary and Suzannah Nabalwad leading the way in their father country, along with other Traditional Landowners and rangers from Mamadawerre ranger station. Most surveys were conducted in the vicinity of Kurruwil, where Warddeken has a balabbala safari tent and remote ranger camp. As Conrad Maralngurra commented, the area was a 'bim town', and the survey revealed a treasure trove of art and history, for which the Traditional Landowners and rangers are currently preparing a conservation plan.

Clan: Kabbari

Location: Kunngulukkih
1 survey trip
4 bim sites

In mid-June, rangers from Mamadawerre visited the Kabbari gorge system to record four previously unrecorded sites. One site included beeswax art in the shape of a cross.

Bolmo Dedjrungi

Location: Dordokiyu
1 survey/maintenance trip
2 sites

Catherine Ralph, Warddeken ranger and Djungkay for Bolmo Dedjrungi estate, led a day trip to find a site featuring a huge red and white ochre kangaroo, which had previously been located by Catherine's uncle Fred Hunter during APB operations in 2014. Catherine also conducted a conservation assessment of one of the main historical contact art shelters for the clan estate, the 'Leichhardt site'. This site, amongst other motifs, features a painting of explorer Ludwig Leichhardt riding a horse. Sadly, over the course of only 10 years, the painting has developed severe water damage in the middle. As for other stratified sites, Warddeken is now establishing a conservation and monitoring plan for the site.

Clan: Warddjak

Location: Mararrkiwu
1 opportunistic survey run during the 2022 Kakbi ward Warddeken bushwalk
3 art sites

During the 12-day bushwalk from Kurruwil to Makkalarl, rangers and coordinators documented three sites opportunistically, which were discovered by participants who used the bushwalking experience to explore new country.

Wurrbbarn

Location: Ngong, Nabedemkelk, Barnbul
1 survey camp and 1 short bushwalk
12 art sites

In March 2022, Landowner Graham Namarnyilk, Djungkay Berribob Dangbungala Watson and other Warddeken rangers flew to Wurrbbarn clan estate, setting up camp near a special billabong with spring water. The camp led to the discovery of many sites, some of which were very old, and some restricted to men only. These sites were only approached by Bininj (men) whilst the daluk (women) moved on to survey other areas. The camp also gave Landowners and rangers a chance to conduct a short bushwalk from the survey area back to camp, continuing to survey more art sites along the way. This allowed rangers to spend more time exploring and embracing country and has been proposed as a potential survey model for the future.

Clan: Wurnkomku

Location: Djurray
1 camp followed by day visits
21 sites

At the end of May and early June, Johnny Reid and the rock art project officer conducted a series of survey trips from Jabiru. The expedition led to the rediscovery of 22 sites, with over 800 photos taken. Some of the sites feature contact art and others depict extremely old ceremonial scenes or yet-to-be-identified macro-fauna. Some of these sites had not been seen or recorded since the time of prolific rock art researcher George Chaloupka, and many sites were recorded by Johnny Reid for the first time.

Clan: Bolmo Marlkawo

Location: Uku
1 survey camp
8 art sites

At the start of October 2021, seven Bininj rangers from Manmoyi and Marlkawo homelands conducted a survey and recon camp in Bolmo Marlkawo clan estate. This was a men's only camp to facilitate young men to reconnect with country, as well as search for some Bininj-only sites believed to be in the area. 8 previously undocumented sites were recorded, with 3 of these sites containing over 50 individual rock art images.

Clan: Badmardi

Location: Deaf Adder
1 survey camp
2 sites

Between the end of July and the beginning of August 2021, a camp on the Badmardi clan estate was held, led by senior women from the two family groups who speak for the Badmardi estate. At the request of the Landowners and with permission of Kakadu National Park, the team camped near a gorge within the Kakadu park border. This site, Balawurru,

is emotionally significant for the Badmardi families as it was once the home of Kabiriki, the old Badmardi man who is the link between the two families. Landowners also requested a visit to Djuwarr, another site on the opposite end of the Deaf Adder gorge mouth. The camp served as an opportunity for the two families to discuss in-depth old familial links, and also gave Landowners an opportunity to discover paintings they were not aware of within the Warddeken IPA.

Clan: Djordi

Location: Kawarddedjabdi
Survey and maintenance trip
9 art sites

In late August 2021, the rock art project officer and five rangers embarked on multiple day trips in Djordi clan estate to conduct site maintenance at nine art sites, and whilst doing so also surveyed and recorded eight previously unrecorded sites. This demonstrates the richness of cultural heritage in the Djordi estate along the Mann River.

Clan: Ngalngbali

Location: Yikarrkarr, Kudjekbinj
1 survey camp and maintenance trip
5 art sites

In mid to late September 2021, a 15-person team from Mamadawerre conducted a four-day rock art survey, maintenance and recording trip to further protect and record rock art sites in Ngalngbali clan estate. A fence was built around one of the longest sites and paintings ever documented in Arnhem Land (and likely the country), featuring a Naworo (a malign giant with six fingers). The fence will protect this important shelter (which is also a burial site) from feral animals. During this survey, five new sites were recorded.

Clan: Mok

Location: Aldaddubbe
Rock art camp with Nawarddeken Academy

Aiming to keep education and knowledge transfer activities a priority, Nawarddeken Academy and the Kunwarddebim Project now run annual dry season camping events focused on rock art. In 2021, a camp was held at Aldaddubbe, with daily learning from the matriarch of the Kuwarddewardde, Mary Kolkiwarra Nadjamerrek. Mary's daughters Hagar, Lois, June and Rhonda guided a teaching session around the many sites which together comprise Aldaddubbe, guiding and talking to the wurdurd (children) about the history of the site and the paintings.

Raymond Guymala shares stories about occupation and rock art sites around Marlkawo with younger rangers and school students.



Intergenerational knowledge transfer collaboration with Nawarddeken Academy

An important strategy established for rock art under the new Plan of Management is the development of a suite of learning units on Kunwarddebim to be incorporated into the newly developed Kuwarddemalkno (seasonal calendar) Curriculum, delivered at Nawarddeken Academy schools at each ranger base. Working closely with educators from Nawarddeken Academy, the Kunwarddebim Project has designed units of learning based on various aspects of rock art, including the importance of managing rock art, occupation and burial sites; using technology to document rock art; identification of stone country fauna from rock art images; and exploring customary patterns of living in the Kuwarddewardde and the use of rock shelters for living in the wet seasons. The collaboration between Nawarddeken Academy and the Kunwarddebim Project is connecting young people with cultural heritage sites and giving them the skills to learn to care for them. Ultimately, it is hoped that some of the students engaged in these activities will grow up to take on active roles in the project.

The formal incorporation of rock art into the Kuwarddemalkno Curriculum means an increase in the frequency of activities for children, and the creation of learning units hosted by elders and professors and supported by both the Nawarddeken Academy and the Kunwarddebim Project. Collaborative learning will occur across the three ranger bases, both inside and outside the classroom.



Opposite top: Serita Naborlhorlh captures monitoring data at an Enamarraway, an important contact art site in Djordji clan estate.

Opposite bottom: Lindsay Whitehurst and other rangers were excited to discover a hand stencil thought to be that of Warddeken founder Bardayal Nadjamerrek AO.

Left: Rangers from Marlkawo were willing to go the extra mile to capture some hard-to-reach paintings.

Below: The Kunwarddebim team facilitated a mock rock art survey for students at Nawarddeken Academy, familiarising them with the processes used by rangers to record art sites.



DALUK

FEMALE RANGERS

2016 daluk employment statistics

(pre-commencement of Daluk Program)

- Warddeken workforce 40% women > 60% men
- Women work only 18% of total hours > 82% of hours worked by men.

2022 daluk employment statistics

- Warddeken workforce 50% women > 50% men
- Women worked 42% of all hours > 58% men

Alexandria Namanyilk
and Lorina Maralngurra
clear a fire break around
an Anbinik forest
©Matthew Abbott

Warddeken's Daluk Engagement Program was established to build a strong female workforce and create gender equality within the workplace. Built around elders and senior women who are committed to being positive female role models, the program has seen Warddeken's employment of women grow steadily and importantly engages daluk across a wide age range, from teenagers to elders. Responding to the localised interests and needs of women across the Warddeken IPA, the project has created a diversified and flexible work program that has led to some big changes in our workforce statistics.

This year has been a significant year for the Daluk Program - for the first time, each ranger base has been supported by a dedicated engagement officer, leading to the strongest engagement outcomes yet. Despite the ongoing challenges of COVID-19, including the first outbreaks at IPA homelands, daluk have continued to reach and exceed program milestones and objectives whilst playing a key role in carrying out land management activities such as rock art maintenance and surveys, supporting the biodiversity monitoring program in both camera traps and data management, Anbinik forest protection, early dry season fire management and traditional knowledge transfer.

Amongst many successes, these are some of the highlights of the past year:

Excellence in the workforce

Two long-serving daluk rangers were promoted to senior rangers, in recognition of their commitment and skills: Jenny Nadjamerrek is now a senior ranger at Kabulwarnamyo and Suzannah Nabalwad is a senior ranger at Mamadawerre.

Daluk camps

Gender-specific daluk camps were started in 2020 as a means to bring together daluk rangers to reflect on the work program and plan for the year ahead, as well as provide an opportunity to focus on cultural learning in the context of women's business. In October 2022, a daluk camp was held at Nawarlbini to focus on these elements. The camp provided valuable insight into the unique challenges of being a daluk ranger, and importantly, created a safe space to discuss potential ways in which to address these sometimes sensitive issues. Daluk from all communities have requested that these camps continue, in particular more intimate daluk ranger camps, which will allow daluk involved in Warddeken's work program to have a direct role in planning and developing the program for the following year.

Half the workforce!

It is with great excitement that we can report that this year, daluk comprised half the workforce and worked 42 per cent of all hours at Warddeken. Given that the Daluk Engagement Program was created specifically to address these inequities, this is a major achievement and testament to the determination of women in the Warddeken IPA to be key players in caring for country and culture.

Kunmayali

Throughout the year, daluk have continued to play an integral role in keeping kunmayali strong within the IPA. This work includes working closely with Nawarddeken Academy schools in delivering Learning on Country activities and continuing the development of the Manne dja Manraket (Bush food and medicine) project. With support from daluk across all bases, this project is taking shape and will incorporate elements such as the creation of a bush medicine first aid course and the completion of Certificate II training on plant knowledge.

Anbinik

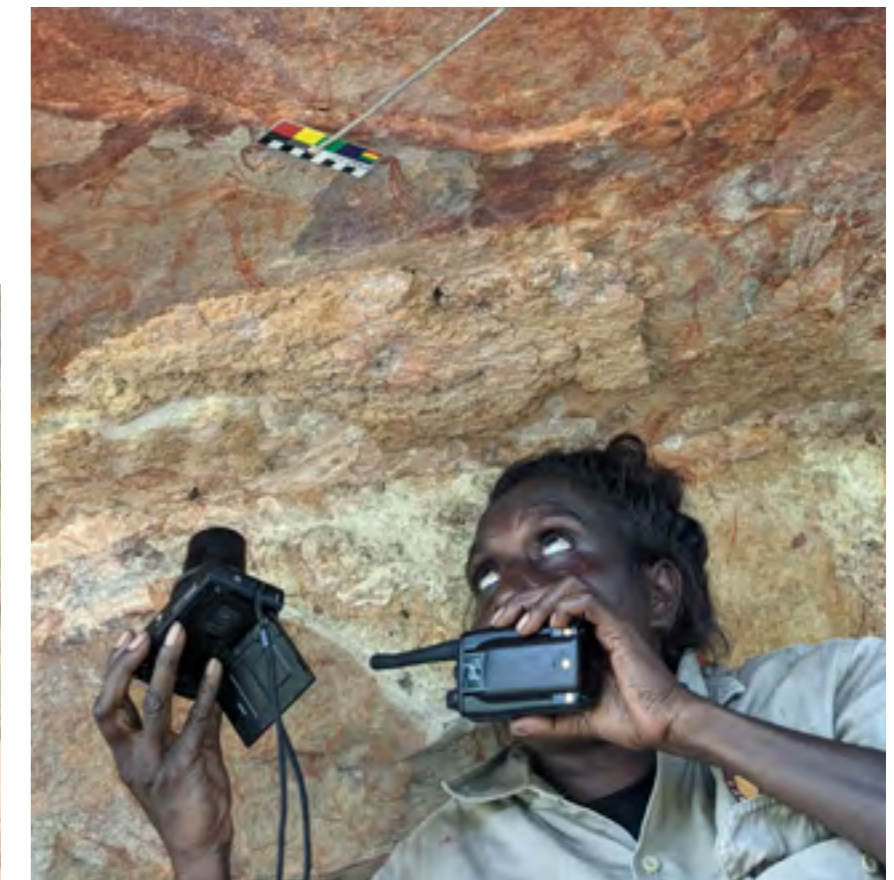
A huge win for the Daluk Engagement Program this year was the heavy involvement of women in delivering the annual Anbinik Protection Program. Daluk rangers played an instrumental role in protecting 14 Anbinik patches this year, and not only this, more experienced daluk rangers were able to lead and teach some of Warddeken's newer daluk rangers from Manmoyi. Seeing so many daluk enthusiastic about getting out and camping on country, getting on the tools and getting their hands dirty for the sake of conservation is exciting and points to a strong future for the Daluk Program.

Training and skills development

The daluk training program continues to grow and build the capacity of the daluk ranger team. Not only is the program providing access to accredited training for rangers to build their skills, but it is also developing a program with facilitators that recognises the learning occurring on a day-to-day basis in the IPA. Warddeken daluk are on-track to receive formal qualifications recognising their dedication to caring for country through the attainment of Certificate II in Conservation and Ecological Management units, with several daluk rangers due to complete their certification in late 2022. In 2022, the focus has been on ecology and Indigenous land management units, while in 2021 the focus was on skills for more practical elements of the work program such as operating and maintaining small engines, 4x4 recovery and operating tractors. With Warddeken being based outside of major communities, access to training is costly and difficult, and this represents a real milestone for the rangers involved. Many daluk rangers were also added to the Warddeken corporate firearm licence, having completed the required training and shown a genuine interest in learning to conduct feral animal control activities.



Top: Five generations of daluk on a camp focused on intergenerational knowledge transmission related to women's ceremony.
Bottom left: Ashaleena Guymala conducts Anbinik protection burning.
Right: Senior ranger Suzannah Nabalwad multitasks on a rock art survey, communicating on a radio while photographing a painting.



KUKKU

FRESHWATER PLACES



The Kuwarddewardde is interlaced with freshwater systems and the Warddeken IPA encompasses vast river systems, streams, billabongs, springs and our unique and fragile perched wetlands. Many of these freshwater places are culturally significant – sacred sites where Ngalyod (the powerful rainbow serpent) or yawkyawk mermaid spirits dwell; sites for ritual increase ceremonies; yet others remain important sources of bush tucker such as fish, turtles, water chestnuts and water lilies. Many springs, creeks and rivers are also the source of drinking water for communities, ranger bases and Landowners spending time on country.

The aquatic habitats of the IPA are also important ecological reasons, supporting a diverse range of freshwater species as well as many favoured bush food and medicine plants. The single greatest threat to all freshwater places in the IPA is introduced hooved animals, primarily Asian water buffalo. Since the introduction of buffalo to the plateau in the 1930s, they have damaged many freshwater sites beyond recognition, fouling the water and trampling surrounding vegetation. Although the overall number of buffalo in the IPA is considerably less than in neighbouring lowland areas, the animals have a disproportionate impact on fragile upland wetland ecosystems around which they cluster during the dry season.

Left: Rhonda Nadjamerrek wades into the clear waters of the Kabulwamamy spring on her country in the Mankungdjang Honey Dreaming estate ©Matthew Abbott

Above: Agnes Gumurdul and Maureen Namarnyilk swim and drink from a freshwater spring system ©Matthew Abbott

FERAL ANIMAL CONTROL

Warddeken has undertaken annual aerial culls of feral animals within the Warddeken IPA since 2007 – one of the most sustained culling efforts within any protected area in Australia. Over time, aerial culling efforts have expanded in both intensity and coverage, reflecting the increased support and understanding from Landowners in the Warddeken IPA for culling, particularly in those areas where conflicting land uses do not exist.

The greatest single challenge for feral animal management in the Warddeken IPA is accessing reliable annual funding to undertake aerial culling operations. Consistency is necessary to maintain low populations across vast landscapes and to manage the ongoing pressure of migration into the IPA from less managed herds to the south.

Over the period of ten days in November, Warddeken engaged Jake Weigl and Helimuster NT to conduct aerial culling in the Warddeken IPA, following consultations with Traditional Owners to determine consent for the program. Based on Landowner consultations, areas previously targeted for culling were revisited and some additional areas were included in the cull. Simultaneously, four rangers underwent aerial platform training and removed 175 animals throughout the course. These rangers are set to undertake the cull in 2022, the first time the entire culling program will be delivered by Indigenous rangers.

The 2021 cull was undertaken across a targeted area of more than 180,000 hectares, focusing on the catchments of the Goomadeer, Liverpool, East Alligator, upper South Alligator, Mann and Cadell Rivers. Whilst Buffalo are the primary target during culling, cattle, horses and pigs were removed opportunistically, with a total of 1822 mixed feral animals removed. Territory NRM provided funding for helicopter time in 2021, which allowed for a culling program running across the catchments that border with neighbouring Kakadu National Park (the South and East Alligator and Daly Rivers).

Given the tendency of buffalo in the escarpment regions to be highly concentrated around freshwater sites – particularly perched wetlands – culls exclusively target these areas to maximise impact. All animals culled are recorded with species, number and location logged in a GPS. Flight paths for culling operations are also recorded.

1298 buffalo aerially
199 buffalo on ground
Total buffalo = 1497

396 pigs aerially
62 pigs on ground
Total pigs = 458

1822 Total feral animals aerially culled
300 Total feral animals culled on ground
2122 Total feral animals removed

As in previous years, buffalo were the most numerous animals culled with the highest populations in the southern reaches of the IPA. In those areas that have been consistently culled (Goomadeer and Liverpool Rivers) numbers, and indeed the overall populations of animals remain low. Cattle, horses and pigs were also culled opportunistically but were not the primary focus of the cull.

Throughout the duration of the cull, ground teams attended cull locations where possible to cut up and retrieve the meat. This meat was then delivered to Traditional Owners in Kabulwarnamyo, Marlkawo, Manmoyi, Mamadawerre, Maningrida, Jabiru, Gunbalanya and Barunga. The distribution of meat is an important component of maintaining support for culling activities and ameliorating some wastage where possible.

Buffalo meat is a staple in the diet of most homeland residents and contributes to food security in the IPA. Additional to the aerial cull, on ground shooting throughout the year removed 194 buffalo – the great majority of which were butchered, with the meat distributed at homeland communities and beyond.

Warddeken IPA feral animal management has led to significant improvements in both the quality of the natural environment, particularly in freshwater ecosystems and associated riparian zones, as well as the remaining buffalo observed by rangers being healthier and better sources of food.



Left: Buffalo cause major damage to the sensitive freshwater ecosystems of the IPA.
 Below: Joshua Garnarradj and other rangers butcher a freshly killed buffalo which will feed the community for days
 ©Matthew Abbott



WILDFIRE SUPPRESSION

One of the components of Warddeken's annual fire management program is the suppression of damaging wildfires in the late dry season, the hottest time of the year. In recent years, with the onset of climate change, firefighting in the Kuwarddewardde is getting more and more difficult. A change in weather trends toward hotter and drier wet seasons, and longer, drier, windier and hotter dry seasons has made wildfire suppression increasingly difficult. Despite this, Warddeken rangers continue to respond to wildfires as necessary, both to protect the ecosystems of the IPA and maximise carbon emissions avoidance.

Wildfire suppression efforts are also instrumental in reducing the extent of severe fires which remove important habitat structural elements such as hollow-bearing trees and logs for native species. This can leave native species more vulnerable to predation and negatively impact local populations. As for the previous five-plus years, the 2021 late dry season proved to be another relentless and challenging season of wildfire suppression for Warddeken. Rangers began firefighting on July 22 and continued to put out fires across the IPA for the next five months, with teams suppressing a total of 53 fires between the commencement of the season until its conclusion on November 26, when the rains finally started in earnest and the wet season set in.

The ignition source of each wildfire ranged from early dry season aerial burns that flared up again from smouldering logs, people burning during fishing and hunting activities, to lightning strikes. Rangers and coordinators worked tirelessly to ensure the fires were completely extinguished, toiling under trying weather conditions and within very hostile terrain. Despite all of these challenges, every fire attended was successfully dealt with.

It was great to again see many of our daluk rangers enthusiastically and effectively participate in wildfire suppression campaigns, with more daluk completing training and building their firefighting skills and confidence.

The perseverance and hard work of our rangers proved effective in restricting the total area burnt by late dry season wildfires to only 2.8 per cent of Warddeken's fire management area – a strong outcome considering the severity of the season. Proof of the professionalism and expertise of our team in delivering fire management programs is that significant improvements continue to be made with all measures relating to the extent and impact of severe wildfires on the Warddeken project area.

53 wildfires controlled
60 rangers involved

Left and right: Warddeken rangers pioneered the use of backpack leaf blowers as a firefighting tool. In the rugged and rocky landscape of the IPA they are far more effective than traditional firefighting tools such as rake hoes and hoses ©Matthew Abbott



WEED CONTROL

When it comes to weed control, consistency is the key to winning what can sometimes feel like an uphill battle. Although the Warddeken IPA is comparatively weed-free when compared to surrounding areas, there remain several weed species of concern, and consistent and vigilant weed control efforts are imperative to ensuring these weed infestations remain managed. For the last 17 years, Warddeken rangers have delivered an annual weed management program across homeland communities, roadsides and other known infestations throughout the IPA. Rangers are always on the lookout for additional weed infestations or new invasive species posing a threat to biodiversity within the IPA.

Warddeken's weed control programs aim firstly to prevent the spread of weeds, which can occur easily via vehicles, animals (feral and native) and wet season flooding, as well as working steadily toward the eradication of certain invasive weed species. The control program targets annual mission grass, perennial mission grass, mimosa, rattlepod, hyptis, sida, caltrop, gmelina, neem and gamba grass.

The logistics of wet season weed works involve much preparation as wet season conditions prohibit travel via road and require rangers to travel by helicopter to various homelands within and surrounding the Warddeken IPA. This year, teams from all three ranger bases worked together to get the job done in extremely hot conditions. Feedback from rangers and coordinators continues to show that sustained control efforts are having a positive impact, with a noted reduction in weed abundance.

The Homelands weeds management program, which focuses on treating annual and perennial mission grass, hyptis, sicklepod, neem and gmelina was conducted between February and April 2022 at the following locations:

- Marlwon (4 rangers over 4 days)
- Manmoyi (7 rangers over 3 days)
- Kabulwarnamyo (4 rangers over 1 day)
- Marlkawo (4 rangers over 1 day)
- Mamadawerre (5 rangers over 3 days)
- Kudjekbinj (5 rangers over 3 days)
- Kumarrinbang (3 rangers over 2 days)

Extensive roadside weed management was conducted between Manmoyi and Mokmek in February and March 2022. This work primarily targeted Hyptis and rattlepod. Unfortunately, the roads between Mokmek, Kabulwarnamyo and Marlkawo were not completed due to the breakdown of critical equipment. New units for all bases have been procured through NTG grant funding to guarantee a comprehensive weed control program in 2023.

In late March, rangers undertook a two-day survey and treatment trip from Manmoyi to the Mann River on the Arnhem Highway, to survey and treat weed infestations along the primary vehicular travel route in the region. Similarly, in late March, rangers from Mamadawerre worked from Marlwon to Wurugoj Creek to survey and treat weed infestations. In early April, rangers from Kabulwarnamyo surveyed weeds from Kumarrinbang to Mamadawerre, and then to Kabulwarnamyo.

For many years, Landowners and rangers from Warddeken Bawinanga (Djelk) requested that the two organisations work in partnership to treat weed infestations in the shared IPA overlap zone. Collaborative work commenced in this region in 2021, however unfortunately Bawinanga was not able to participate in 2022 control works. Following consultations with Landowners and Bawinanga rangers, rangers from Manmoyi conducted weed control work at Yikkararkal and its network of access tracks in early April. Roadside spraying along Manmoyi, Yikkararkal and Kakokabuldi access roads was conducted in late March 2022. This important work not only treats existing infestations but ensures that when the roads open up again after the wet season waters subside, those weeds aren't spread by passing vehicles.



Above: A team of rangers from Manmoyi use vehicle-mounted spray units to treat infestations along the main road into the eastern region of the IPA.

Right: Tinesha Narrorga uses a quad-mounted spray tank to treat weeds around Kudjekbinj homeland community in the north of the IPA.



KUNRED COMMUNITIES



There are seven homeland communities within the Warddeken IPA, four of which are currently occupied on a year-round basis. As one of only a handful of organisations in Australia based out of homelands, Warddeken are deeply committed to supporting and advocating for Nawarddeken who live in these remote and chronically underserved communities. Where possible, Warddeken work alongside communities to increase road access, improve environmental health conditions and contribute to sustainable futures on country. Warddeken is the registered Homelands Service Provider for Kabulwarnamyo and works closely with Demed Aboriginal Corporation to provide services for the people of Mamadawerre, Manmoyi and other communities within the IPA.

Top: Rangers from all three bases completed custom bushfire training delivered by Arnhem Land Fire Abatement (NT).

Bottom left: Alexandria Namanyilk and other daluk rangers were supported to successfully gain provisional drivers licences.

Bottom right: Manmoyi rangers build a new balabbala dwelling at Manmoyi ranger base.

Food security

With the nearest food stores hours away, all food supplies must be transported into communities in the IPA. This is challenging given the remoteness of the region and is particularly difficult in the wet season when there is no road access. With private vehicle ownership rare and air charters prohibitively expensive, communities across the Warddeken IPA have historically experienced widespread food insecurity.

With the support of Karrkad Kanjdji Trust and Simplot, for the previous nine years Warddeken has tackled this issue through the provision of a fortnightly food delivery service via charter plane to each of the three ranger bases, a service provided free of charge. Rangers and community members are supported by Warddeken administrative staff to place orders (using their wages or Centrelink income to pay) from the IGA supermarket in neighbouring Kakadu National Park. Staff from IGA pack each order, with pilots from charter company Kakadu Air loading them into small aircraft and delivering them to each IPA community. This service is a critical component of regional service provision – one which offers Nawarddeken Landowners the security of reliable access to food.

An exciting development this year was the launch of the Nabiwo Store at Kabulwarnamyo, which opened its doors at the beginning of 2022. The store, also supported by Karrkad Kanjdji Trust and Simplot, is an eight-foot sea container that is filled with essential dry goods such as tea, milk, canned goods, toiletries and sanitary products to support people during the fortnightly tucker run. The Nabiwo Store is an important piece of social infrastructure, bringing an increased layer of food security to the remote ranger bases. Daluk rangers from Kabulwarnamyo have worked closely with the daluk base coordinator, learning to run sales and perform stocktake, and there are plans to build on these skills so they can take on its management in the future.

Manmoyi infrastructure upgrades

Rangers at Manmoyi annually perform one of the most important jobs in the IPA – opening the Mann River crossing at Manmoyi after the cessation of monsoonal rains. This stretch of the river is particularly sandy, and throughout the wet, sand and silt build up over the crossing, requiring significant earthworks.

Rangers from Manmoyi also continued to build two new-generation steel balabbalas (the updated, lockable model of the original Kabulwarnamyo safari tents) to house the teachers at the newly registered Manmoyi

Nawarddeken Academy. With on-the-job mentoring from the ranger coordinator, a team of rangers helped weld the frame, install the cypress upright posts and screwed down the deck of the dwellings, which are already housing the new teachers.

Kabulwarnamyo infrastructure upgrades

The installation of a production bore at Kabulwarnamyo in 2020 was a major upgrade to infrastructure no longer meeting the demands of the community. After its installation, it became apparent that the associated water infrastructure (primarily the pipes connecting the tanks to the ranger base, dwellings and showers in the community) would need to be upgraded to match the increased capacity of the system. The time-consuming and laborious process of replacing the plumbing for the entire community commenced in early 2022 and will continue into 2023. The upgrade will also include the installation of a new water filtration system.

Mechanical works

A trained diesel mechanic has been stationed at Kabulwarnamyo ranger base since 2015, to oversee the important task of maintaining and repairing Warddeken's fleet of vehicles, plant machinery and equipment such as leaf blowers, chainsaws and generators. Rangers often work alongside the mechanic, and those who express a particular interest in mechanics are supported to work directly with the mechanic to improve their skills. With Manmoyi and Mamadawerre ranger bases now having their own workshops equipped with a mechanical hoist, the mechanic has been spending an increased amount of time working alongside rangers from all ranger bases, improving the overall mechanical skills base.

This year Warddeken has seen an unusually high turnover of mechanics, which has meant for some periods of time there has been no permanent mechanic within the IPA. To ensure this doesn't impact the on-the-job training aspect of Warddeken's mechanical works program, a contract mechanic has been engaged to continue working alongside rangers to manage the fleet.

THE NAWARDDDEKEN ACADEMY STORY

OUR HOME-GROWN STONE COUNTRY
SCHOOL GAINS INDEPENDENCE

Nawarddeken Academy students from Mamadawerre school joined rangers and families on a stone country bushwalk in the north of the IPA @Matthew Abbott

In 2015, with the help of the Karrkad Kanjdji Trust and a group of committed supporters, Warddeken and the community of Kabulwarnamyo established Nawarddeken Academy – a bicultural school to teach a locally developed, culturally-oriented curriculum in tandem with the Australian Curriculum. Following the success of the Kabulwarnamyo school, Nawarddeken Academy has now established schools in Manmoyi and Mamadawerre communities, bringing full-time education to the Kuwarddewardde for the first time.

For many years, rangers and families of the Warddeken IPA petitioned for education delivered on country; elders and parents dreamed of a dual-toolbox education that would make their children strong in the cultural and contemporary worlds. Over the last seven years, this dream has become a reality. With the generous support of the Karrkad Kanjdji Trust, three Nawarddeken Academy schools have now been established, providing bicultural education for school-aged children living in the Warddeken IPA. What began as a one-teacher classroom under a tarp with scant resources, has grown into three registered, independent schools that together can cater for over 80 students, with six permanent teachers, fifteen Indigenous teaching assistants, a CEO and early learning programs catering for children from zero to five-years-old.

Communities have joint ownership of Nawarddeken Academy, actively overseeing the direction of the schools and participating in the education of children on a daily basis. The Academy focuses on empowering young people to be strong and confident, preserving Nawarddeken languages and culture through bilingual and bicultural experiential learning and promoting intergenerational education opportunities. The schools enable Indigenous ranger jobs to be created and retained because children are able to be educated at home, on country in the Warddeken IPA.

Since its inception, Nawarddeken Academy has been innately linked to Warddeken, with Warddeken initially running the Kabulwarnamyo school, and in 2017, registering Nawarddeken Academy Limited as a wholly owned subsidiary of Warddeken. With the continued growth and success of Nawarddeken Academy over the years, the decision was made that the best approach moving forward was to enshrine NAL as a company in its own right. In early 2022 this became a reality, and Warddeken took the necessary actions to see Nawarddeken Academy become its own company.

The establishment of Nawarddeken Academy will forever remain one of Warddeken's proudest achievements. The schools play a vitally important role in the future of IPA communities, providing a first-class education to children who went without for so long. Under the new structural arrangements, the strong connection between Warddeken's ranger program and Nawarddeken Academy will continue, with the schools representing one of the primary vessels through which cultural knowledge and skills will be taught. We will continue to report on the partnership between the two organisations as we move forward together and look forward to sharing these stories in the coming years.



Clockwise from top: Students join daluk rangers and professors during a weaving session at a daluk ranger camp at Nawarlbin.

Professor Christopher Ngaboy shows Alan Hendahow to hold a mankole (spear) correctly.

Tyler Wood from Manmoyi plays the didjeridu.

Rosanna Guymala learns how to pound bark in preparation for making bush string from Charleenee Bangarr.



Far left top: Kabulwarnamyo Nawarddeken Academy students, teachers and CEO.

Far left middle: Mamadawerre Nawarddeken Academy students and teachers.

Far left bottom: Manmoyi Nawarddeken Academy students and teachers.

Above: Agnes, Maureen, Tyson and Estella use iPad's to document bush foods.

Right: Kerrida, Onennita, Delsanto, Richard and Royce visit the 'cold cave' on Mok clan estate, a special site where cold, fresh water bubbles from an underground spring.

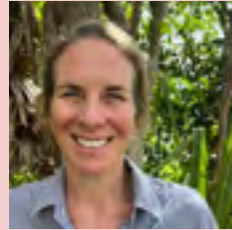
Left: Kerrida during a literacy activity scaffolded around bush foods and seasonality.



NGAD NAWARDDEKEN LAND MANAGEMENT

OUR PEOPLE

Staff



Nina Brown
CEO (Incoming)



Shaun Ansell
CEO (Outgoing)



Dean Yibarbuk
Fire Ecologist,
Mentor & Professor



Harry MacDermott
Operations Manager



David Arthur
Financial Officer



Terrah Guymala
Senior Ranger &
Cultural Projects



Jenny Nadjamerrek
Senior Ranger



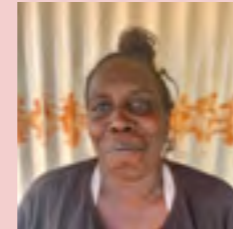
Freddy Nadjamerrek
Senior Ranger



Arijay Nabarlambarl
Senior Ranger



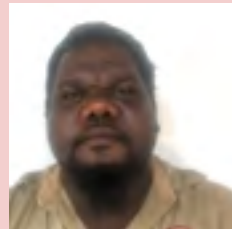
Elizabeth Nabarlambarl
Senior Ranger



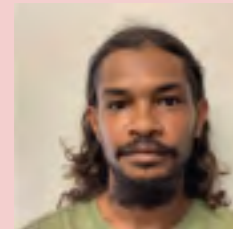
Suzannah Nabalwad
Senior Ranger



Greg Lippo
Senior Ranger



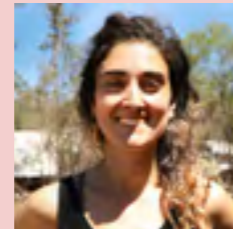
Manoah Nawilil
Senior Ranger



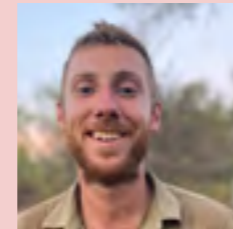
Lindsay Whitehurst
Senior Ranger



Dr Cara Penton
Ecological Monitoring
Manager



Dr Claudia Cialone
Rock Art Project
Manager



Chester Clarke
Rock Art Project
Officer



Arlo Meehan
Kabalwarnamyo
Bininj Ranger
Coordinator



Celina Ernst
Kabalwarnamyo
Daluk Ranger
Coordinator



Torsten Unnasch
Mamadawerri Bininj
Ranger Coordinator



Stella Thomas
Mamadawerri Daluk
Ranger Coordinator



Aleks Galweski
Manmoyi Bininj
Ranger Coordinator



Ella-Monique Mason
Manmoyi Daluk
Ranger Coordinator



Lauren Hicks
Administration
Officer

Daborrabolk – Professors



Lillian Guymala



Deborah Nabarlambarl



Wurdib Nabalwad



Berribob Dangbungala Watson



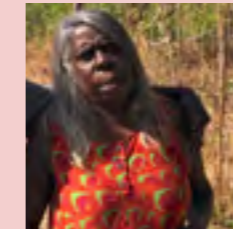
Mary Kolkiwarra Nadjamerrek



Josie Maralngurra



Leanne Guymala Namarnyilk



Margaret Nabalwad



Christopher Ngaboy

Thanks to our dedicated team of rangers

Bininj rangers

Abraham Narrku Dakgalawuy, Adrian Watson, Alfred Nalorlman, Alton Marami, Amaziah Nadjowh, Andrew Maralngurra, Andy Wood, Anthony Billis Nabarlambarl, Anthony Gumurdul, Anthony Sullivan, Arijay Nabarlambarl, Arthur Gamarrawu, Asher Badari, Ashley Nayilibidj, Austin Alio Guymala, Billy Nalorlman, Bradley Wesley, Byron Gurrubul, Cain Naydwana, Caleb Maralngurra, Canon Manyita, Cassler Koimala, Casten Guymala, Charlton Namundja, Clayton Nadjamerrek, Clayton Watson, Clifton Gulbirrurrba, Conrad Maralngurra, Damien Bulumbara, Darius Maralngurra, Deon Koimala, Deonus Djandjomerr, Derek Guymala, Dick Djogiba, Dominic Narornga, Don Namundja, Duane Dakgalawuy, Eldrick Rankin Bush, Elkanah Dullman, Enosh Nadjamerrek, Esau Djandjomerr, Esmond Wood, Ezariah Kelly, Frankie Nadjamerrek, Frazer Gurrubul, Fred Hunter, Frederick Nadjamerrek, Gabriel Maralngurra, Gavin Namarnyilk, Gavin Phillips, Gayvin Bonson, George Watson, Graham Namarnyilk, Greg Lippo, Jai Nabalwad Nadjamerrek, Jakah Billis, Jamie Billis, Jamie Yibarbuk, Jason Nabalwad, Javin Joshua Dudanga, Jayden Wurrkgidj, Jeff Marrgawaidj, Jenkin Guymala, Jesse Hunter, Jezariah Nalorlman, Jimmy Nayilibidj, Jobie Managku, Johnny Reid, Jonathan Djogiba, Josh Cameron, Joshua Garnarradj, Joson Naborlhborlh, Kamahl Djandjomerr, Karl Makin, Keenan Nayinggul, Keith Nadjamerrek, Kenneth Mangiru, Kevin Bulliwana, Kingston Naborlhborlh, Kormel Nawilil, Kurt Managku, Leon Guymala, Leon Gurruwiwi, Lesley Phillips, Lewis Naborlhborlh, Lindsay Whitehurst, Manoah Nawilil, Matthew Thompson, Melchi Naborlhborlh, Melchizedek Maralngurra, Micah Garnarradj, Mitchell Nabarlambarl, Nicodemus Nayilibidj, Oscar Jumbiri, Paul Alangale, Paul Marrkula, Peter Djandjomerr, Randy Yibarbuk, Ray Ashley, Ray Nadjamerrek, Raymond Guymala, Reon Nabarlambarl, Richard Miller, Ricky Nabarlambarl, Robert Balmana, Robert Junior Rickson, Rodney Naborlhborlh, Rodney Nagawalli, Rodriguez Wilson, Romelo Nalorlman, Romeo Jambulwanga Redford, Ross Guymala, Sebastian Wesley, Selone Djandjomerr, Seth Jumbiri, Silvaris Gumurgal, Steven Wilson, Stuart Guymala, Terrah Djogiba, Terrah Guymala, Terrance Namarnyilk, Thomas Badari, Tommy Henda, Tyrone Watson, Vernon Garnarradj, Victor Garlngarr, Willie Nabalwad Nabarlambarl, Xavier Champion, Zacharia Namarnyilk, Zario Guymala, Zecchaeus Garlngarr, Zeron Dalton

Daluk rangers

Ada Nabalwad, Alexandria Namarnyilk, Alexia Gumurdul, Angella Bangarr, Anne Gumurdul, Anne Marie Ahwon, Antonia Djandjomerr, Asheena Guymala, Ashelina Guymala, Aspellita Guymala, Beatrice Nayilibidj, Benita Alangale, Bernadette Namarnyilk, Bernadette Yibarbuk, Besheena Namarnyilk-Koimala, Besilina Wood, Camilia Lindjewanga, Cammie Wood, Carmen Garnarradj, Carol Dennis, Carol Nayilibidj, Carol Pamkal, Catherine Ralph, Chantel Nabalwad, Charleene Bangarr, Christella Namundja, Christianna Djandjomerr, Christine Alangale, Christine Nabobbob, Claudia Maralngurra Wauchope, Colleen Nagurrurrba, Connie Nayinggul, Damazine Alangale, Delane Mary Badari, Delvina Guymala, Denell Djumburri, Diane Nalorlman, Donna Nadjamerrek, Doreen Nayilibidj, Dorita Djorlom, Drusilla Nadjamerrek, Edna Midjarda, Edwina Koimala, Elica Djogiba, Eliza Nawirridj, Elizabeth Guymala Bangarr, Elizabeth Nabarlambarl, Ethel Nayinggul, Evelyn Norornga, Gabriella Maralngurra, Georgina Neave, Gina Yulidjirri, Glenda Gurruwiwi, Guyuwanga Guymala, Gwen Nayilibidj, Hagar Nadjamerrek, Jady Gurrubul, Jalisa Koimala, Janice Nalorlman, Janine Nabegeyo, Jenny Hunter, Jenny Nadjamerrek, Jeraiah Guymala, Jessica Nayilibidj, Jessie Alderson, Jill Roberts, Jodie Bangarr, Josephine Nadjorngorle, Joylene Cameron, Juliette Dalywater, June Nadjamerrek, Justina Namarnyilk, Kayla Nagurrurrba, Kaywana Gamarrawu, Kyrin Bulliwana, Lana Nabalwad, Lauren Gurrubul, Levvia Nayilibidj, Lillian Jnr Guymala, Lois Nadjamerrek, Loretta Badari, Lorina Maralngurra, Lorna Nabalwad, Mala Singleton, Mandy Muir, Marlene Cameron, Martha Cameron, Mavis Alangale, Mavis Djumbarri, Maylene Nabarlambarl, Merryl Namundja, Michelle Bangarr, Milly Naborlhborlh, Naomi Nadjamerrek, Natasha Lee, Nell Naborlhborlh, Nerisha Nabalwad, Penelope Yibarbuk, Peta Anne Nalorlman, Priscilla Badari, Recain Nabarlambarl, Rhonda Nadjamerrek, Ricaieha Nawirridj, Rosemary Nabalwad, Roxanne Naborlhborlh, Ruth Nabarlambarl, Salonica Naragoidj Djumburri, Sara Cooper-Billess, Sarah Billis, Scholastica Waldock, Seraphina Watson, Serina Namarnyilk Yibarbuk, Serita Naborlhborlh, Seriya Djulburi Naydwana, Sharon Gaminunga Gurruwiwi, Shemaiah Guymala, Shirley Djandjomerr, Sophie Naborlhborlh, Stacey Nawirridj, Susan Nabalwad, Suzannah Nabalwad, Sylvia Badari, Tahnee Nabalwad, Tara Managku, Tara Yibarbuk Buckskin, Taran Nabarlambarl Nawilil, Tasma Guymala, Terracia Namarnyilk, Theona Namarnyilk, Tiarni Naborlhborlh, Tinesha Nabalwad Narornga, Treanne Nalorlman, Vietta Bangarr, Wendy Namarnyilk, Wynita Naborlhborlh, Zara Anne Nalorlman

THE KARRKAD KANJDJI TRUST



Karrkad Kanjdji is the Kunwinjku name given to us by our founders, the Traditional Landowners of the Warddeken and Djelk Indigenous Protected Areas – Karrkad referring to the stone county highlands and Kanjdji to the savanna lowlands that we are working together to protect.

Karrkad Kanjdji is the Kunwinjku name given to us by our founders, the Traditional Landowners of the Warddeken and Djelk Indigenous Protected Areas.

It refers to the stone country highlands and savanna lowlands of Arnhem Land that we work together to protect.



Stacey Irving, KKT CEO

KKT was founded by visionary people alongside the establishment of the Warddeken and Djelk Indigenous Protected Areas. Our mission is to bring together Landowners and like-minded supporters to strengthen the Indigenous conservation movement, caring for country, culture, and community.

Reflecting the priorities of our partner organisations, we take a holistic approach to conservation. Each project we fund is community-owned and strengthens the ability of Indigenous people to manage their natural and cultural assets. In agreement with our partner organisations, we support projects in the following focus areas:

1. Protecting native biodiversity
2. Investing in women rangers
3. Educating future custodians
4. Supporting people on country
5. Managing fire and climate
6. Safeguarding Indigenous culture

Thanks to the generosity of Karrkad Kanjdji Trust supporters, we granted over \$2.3 million to Warddeken and the Nawarddeken Academy in the 2021-2022 financial year and secured further funding for 2023 and beyond. In a year with many highlights, it was a privilege to support the expansion of the Nawarddeken Academy from one to three sites, bringing full, time bi-cultural and community-owned education to Manmoyi and Mamadawerre ranger bases. We are also proud to play a supporting role in the daluk ranger program, reaching the milestone of having a women's coordinator employed across all three ranger bases in the IPA, achieving equal opportunity for women in the workforce.

It is a privilege to work together with Warddeken. For more information or to donate to their critical work, please contact the Karrkad Kanjdji Trust at mail@kkt.org.au or via kkt.org.au

OUR PARTNERS

Thanks to our many supporters and partners



EXTRACT FROM FINANCIAL STATEMENTS FOR THE YEAR ENDED 30 JUNE 2022

Independent Auditor's Report to the members of Warddeken Land Management Limited

Report on the Audit of the Financial Report

Opinion

We have audited the financial report of Warddeken Land Management Limited (the "Company"), which comprises the statement of financial position as at 30 June 2022, statement of profit or loss and other comprehensive income, statement of changes in equity and statement of cash flows for the year then ended, and notes to the financial statements, including a summary of significant accounting policies, and the directors' declaration.

In our opinion the accompanying financial report of Warddeken Land Management Limited, is in accordance with the requirements of Division 60 of the *Australian Charities and Not-for-profits Commission Act 2012* and the *Corporations Act 2001*, including:

(a) Giving a true and fair view of the Company's financial position as at 30 June 2022 and of its financial performance for the year then ended; and

(b) Complying with Australian Accounting Standards and the *Corporations Regulations 2001* and Division 60 of the *Australian Charities and Not-for-profits Commission Regulation 2013*.

Basis for opinion

We conducted our audit in accordance with Australian Auditing Standards. Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Report* section of our report. We are independent of the Company in accordance with the auditor independence requirements of the *Australian Charities and Not-for-profits Commission Act 2012* and the *Corporations Act 2001* and the ethical requirements of the Accounting Professional & Ethical Standards Board's APES 110 *Code of Ethics for Professional Accountants (including Independence Standards)* (the Code) that are relevant to our audit of the financial report in Australia. We have also fulfilled our other ethical responsibilities in accordance with the Code.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Emphasis of Matter - Basis of Accounting

We draw attention to Note 1 to the financial report, which describes the basis of accounting. The financial report has been prepared for the purpose of fulfilling the Directors financial reporting responsibilities under the Division 60 of the *Australian Charities and Not-for-profits Commission Act 2012* and the *Corporations Act 2001*. As a result, the financial report may not be suitable for another purpose. Our opinion is not modified in respect of this matter.

Directors' responsibility for the Financial Report

The directors of the Company are responsible for the preparation of the financial report that gives a true and fair view in accordance with Australian Accounting Standards, the *Corporations Act 2001* and the *Australian Charities and Not-for-profits Commission Act 2012* and for such internal control as the directors determine is necessary to enable the preparation of the financial report that gives a true and fair view and is free from material misstatement, whether due to fraud or error.

In preparing the financial report, the directors are responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intends to liquidate the Company or to cease operations or has no realistic alternative but to do so.

Auditor's responsibilities for the Audit of the Financial Report

Our objectives are to obtain reasonable assurance about whether the financial report as a whole is free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with the Australian Auditing Standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of this financial report.

As part of an audit in accordance with the Australian Auditing Standards, we exercise professional judgement and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by those charged with governance.
- Conclude on the appropriateness of the directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial report or, if such

disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the financial report, including the disclosures, and whether the financial report represents the underlying transactions and events in a manner that achieves fair presentation.

We communicate with the directors and management regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.



NEXIA EDWARDS MARSHALL NT CHARTERED ACCOUNTANTS

Level 2 TCG Centre
80 Mitchell Street
Darwin NT 0800



NOEL CLIFFORD

Partner

Dated 21st September 2022

Statement of Profit or Loss and Other Comprehensive Income

	2022 \$	2021 \$
REVENUE AND OTHER INCOME		
Commonwealth Government Grants	2,343,583	2,770,265
Territory Government Grants	59,231	88,649
Non Government Grants	3,554,063	2,239,235
Fee for Service Income	574,173	853,252
Other Income	138,936	170,390
Interest Received	374	280
Total Revenue and Other Income	6,670,360	6,122,071
OPERATING EXPENSES		
Employee Benefit Expenses	3,362,012	2,622,195
Depreciation Expenses	277,806	216,102
Other Expenses	3,207,900	2,569,851
Total Operating Expenses	6,847,718	5,408,148
Profit (Loss) for the year	(177,358)	713,923
Other Comprehensive Income	-	-
Total Other Comprehensive Income	-	-
Total Comprehensive Income (Loss) for the year	(177,358)	713,923

Statement of Financial Position

	2022 \$	2021 \$
ASSETS		
<i>Current Assets</i>		
Cash and Cash Equivalents	1,628,279	1,500,415
Trade and Other Receivables	143,657	467,610
Other Current Assets	88,906	-
Total Current Assets	1,860,842	1,968,025
<i>Non-Current Assets</i>		
Property, Plant and Equipment	2,155,946	1,662,801
Right of Use Assets	135,393	-
Total Non-Current Assets	2,291,339	1,662,801
Total Assets	4,152,181	3,630,826
LIABILITIES		
<i>Current Liabilities</i>		
Trade and Other Payables	501,108	489,705
Contract liabilities	540,482	-
Lease Liabilities	26,660	-
Employee Provisions	128,075	123,387
Total Current Liabilities	1,196,325	613,092
<i>Non-Current Liabilities</i>		
Lease Liabilities	115,480	-
Total Non-Current Liabilities	115,480	-
Total Liabilities	1,311,805	613,092
Net Assets	2,840,376	3,017,734
EQUITY		
Retained Earnings	2,840,376	3,017,734
Total Equity	2,840,376	3,017,734

IN REMEMBRANCE OF OUR VISIONARY LEADER

**BARDAYAL
LOFTY NADJAMERREK AO
1926–2009**



**Yakkake Wamud Namok, djorrhbayeng,
ngundimanjbun rowk bu kanbukkabukkang
ngadberre angarre nawarddeken, kankangemang
ngadberre Wamud.**

Wamud of the Mok clan, in whose special clan language we use the Mok clan word 'yakkake' — our dear friend.

We all thank you for everything you have taught us, the culture and way of life from the rock country. Our hearts cry out to you Wamud.

Munguyhmunguyh ngarridjalbengkan ngudda.
We shall forever think about you.

**Kunmalng ke karrurndeng kore Ankung Djang, kore
Djabidj Bakoluy, kore Kundjorlomdjorlom, Nabiwo
Kadjangdi, Ankung Kangeyh, Kabulwarnamyo,
kore “the dear one”.**

Your spirit will return to the Honey Dreaming sacred places, to Djabidj Bakoluy, to Kundjorlomdjorlom and Nabiwo Kadjangdi, to Ankung Kangeyh and Kabulwarnamyo, the place you referred to as “the dear one”.

You Wamud will always be our “dear one”.



Water lilies are one of the most versatile plant foods available, with the seeds, tuber, corm and roots all being edible.



“IN THE YEARS SINCE THE
DECLARATION OF THE WARDDEKEN
INDIGENOUS PROTECTED AREA,
OUR RANGERS HAVE WORKED
TIRELESSLY TO PROTECT THE STONE
COUNTRY OF WESTERN ARNHEM LAND.
OUR OLD PEOPLE WOULD BE SO
PROUD OF WHAT WE HAVE ACHIEVED
AS BININJ WORKING TOGETHER.”

— DEAN YIBARBUK, CHAIRMAN

Cyril Ganawa painted in delek (white ochre)
after a visit to Madjarrngalkku, a famed
delek site on a small creek in the Maburrinj
estate in the north of the IPA.

WARDDEKEN.COM