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Department of
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Over the past eight years, the Liberal National Government has delivered greater protection for the environment than any other government in the history of this State.

The Liberal National Government's achievements in conserving the nature of the Kimberley are unprecedented.

Renowned for its wild and rugged beauty, attracting thousands of visitors every year, images from the Kimberley region are famous around the world. From waterfalls at Mitchell Plateau to the amazing Horizontal Falls, thousands of migratory birds at Eighty Mile Beach and whales breaching in Camden Sound, the Kimberley is spectacular.

To protect the environmental jewels of this vast area, the \$103.6 million *Kimberley Science and Conservation Strategy* is creating the largest interconnected system of marine and national parks in the State to be jointly managed with traditional owners.

There is no greater example of the *Kimberley Science and Conservation Strategy's* successes than the creation

of the massive Great Kimberley Marine Park – the second largest coastal marine park in Australia – on 17 December 2017.

This enormous marine park not only rivals the Great Barrier Reef Marine Park in size, but scientists now believe that it will protect greater biodiversity than the Great Barrier Reef, with new species still constantly being discovered in Kimberley waters.

This is the 10th issue of *Kimberley Science and Conservation News* and each issue has been packed with information on the Government's achievements, usually completed in partnership with the local traditional owner groups, whether they be in park establishment, weed control, environmental education, improving visitor facilities, prescribed burning for protection of infrastructure and habitats, protecting wildlife through feral animal control, new scientific discoveries that will have practical applications or other important measures.

Albert Jacob MLA
Minister for Environment



Above: Parks and Wildlife Director General Jim Sharp, Balangarra Aboriginal Corporation Vice Chair Derek Gallagher and Environment Minister Albert Jacob at the North Kimberley Marine Park announcement. *Photo – Parks and Wildlife*

The State Government's commitment to establish a Great Kimberley Marine Park has been realised, with Environment Minister Albert Jacob announcing the creation of the massive 1,845,000 hectare North Kimberley Marine Park.

The park contains dramatic seascapes and a complex variety of marine habitats and surrounds more than 1000 islands, each providing an array of intertidal habitats.

More than three million hectares of ocean covering approximately half of the State coastal waters of the Kimberley are now protected in six new marine parks created under the State Government's *Kimberley Science and Conservation Strategy*.

The new marine parks have been established at Camden Sound, Eighty Mile Beach, Horizontal Falls, North Lalang-garram, Roebuck Bay and now North Kimberley.

The Great Kimberley Marine Park is made up of the Lalang-garram / Camden Sound Marine Park, Lalang-garram / Horizontal Falls Marine Park, North Lalang-garram Marine Park and the North Kimberley Marine Park.

"It is the second biggest marine park in Australia and helps form one of the world's largest networks of interconnected marine and terrestrial reserves," Mr Jacob said.

"With the creation of the new marine parks, the Liberal National Government has increased the total area of the State's marine parks and reserves from about 1.5 million hectares to more than five million hectares, an increase of more than 200 per cent since 2008."

The coral reefs of the north Kimberley have the greatest diversity in Western Australia and are some of the most pristine and remarkable reefs in the world. Large estuaries,



Great Kimberley Marine Park created

Above: King George Falls in the North Kimberley Marine Park. *Photo – Tourism WA*

mudflats and extensive mangrove forests support many threatened, protected and culturally important species such as dugongs, turtles and sawfish.

"As well as being an exceptional conservation outcome, the creation of these parks provides employment and management opportunities for traditional owners and opportunities for growth in tourism," Mr Jacob said.

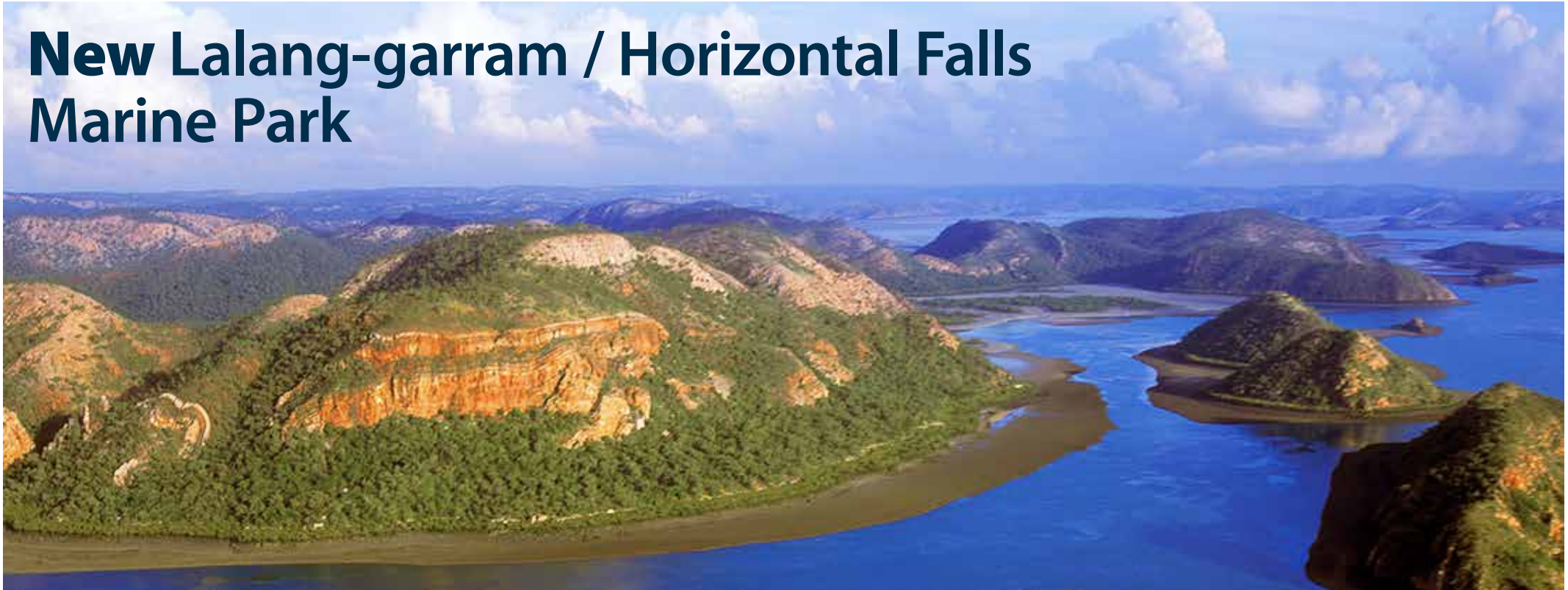
The north Kimberley is also rich in Aboriginal culture and the Balangarra, Wunambal Gaambera, Ngarinyin and Miriuwung

Gajerrong people have a cultural, spiritual and social connection to the north Kimberley sea country.

North Kimberley Marine Park will be jointly managed with traditional owners through the establishment of joint management bodies.

The Balangarra sea country in the North Kimberley Marine Park will be jointly managed with traditional owners following the finalisation of an Indigenous Land Use Agreement by the Balangarra Aboriginal Corporation.

New Lalang-garram / Horizontal Falls Marine Park



Left: Talbot Bay in the Lalang-garram / Horizontal Falls Marine Park. Photo – Kimberley Media

The world renowned Horizontal Falls in the Kimberley region, one of the most significant tourist attractions along the Kimberley coast, is being protected with the creation of the amazing Lalang-garram / Horizontal Falls and North Lalang-garram marine parks.

In Derby last month, Environment Minister Albert Jacob said the creation and joint management of these two new marine parks would ensure the long term protection of this unique conservation, cultural and ecotourism destination.

“Creating these additions to the conservation estate in partnership with the Dambimangari people is an important

milestone under the Liberal National Government’s *Kimberley Science and Conservation Strategy*,” he said.

“We have been working with the Dambimangari Aboriginal Corporation since 2013, and have signed an Indigenous Land Use Agreement (ILUA) to jointly manage their sea country while providing employment and economic opportunities for Dambimangari people.”

Mr Jacob said the creation of the Lalang-garram / Horizontal Falls and North Lalang-garram marine parks will enable new tourism opportunities and provide for management frameworks to be

put in place now, ensuring that tourism development in these areas is sustainable and high quality.

“The marine parks will provide increased protection for fringing coral reef systems, mangrove lined creeks and bays home to a variety of marine species including dugongs and turtles,” he said.

“The final management plan affords a high level of protection to all areas of the marine parks, providing an integrated management approach for the whole of Dambimangari sea country.”

New Kimberley conservation reserves



Above: One of the new coastal reserves at Eighty Mile Beach. Photo – Parks and Wildlife

The Liberal National Government has created a new 230,000 hectare conservation park in the Kimberley.

The Walyarta Conservation Park and five other new parks and reserves are near the Eighty Mile Beach Marine Park between Port Hedland and Broome.

Environment Minister Albert Jacob said the new park and reserves were the result of the State Government's partnerships with traditional owners - the Karajarri, Nyangumarta and Ngarla people.

The reserves were also the first to be jointly vested under recent amendments to the Conservation and Land Management Act.

"The creation and joint management of these conservation areas delivers on the Liberal National Government's commitment to protect the region's natural and cultural values under the *Kimberley Science and Conservation Strategy*," Mr Jacob said.

"We have worked with traditional owners to develop Indigenous Land Use Agreements that provide for conservation as well as direct employment opportunities for Aboriginal people, in on-ground land management roles and Aboriginal ranger programs."

The Minister said Walyarta Conservation Park protected internationally significant wetlands of the Eighty Mile Beach Ramsar site.

"The area is of great cultural significance to traditional owners because it was used by Aboriginal people as they traversed the country from inland to the coast," he said.

The new reserves will ensure these important cultural sites are protected while enabling traditional owners to continue to enjoy and maintain their customary practices, protect native plants and animals, and promote local tourism and visitor opportunities.

Walyarta Conservation Park contains threatened and priority ecological communities, including one of only two inland mangrove communities in Australia.



Top: Golden-backed tree rat. *Photo – Norm McKenzie/Parks and Wildlife* **Top:** Warrander Lookout at the northern end of the Mitchell Plateau. *Photo – Parks and Wildlife*

Mammals abundant on the Mitchell Plateau

Northern quolls, golden bandicoots, golden-backed tree-rats and brush-tailed rabbit rats were among a range of threatened species found during a recent wildlife survey of the Mitchell Plateau in the Kimberley.

The survey conducted by the Department of Parks and Wildlife and Wunambal Gaambera Aboriginal Corporation's Uunguu Rangers found an abundance of mammals in parts of the Mitchell River National Park and the Uunguu Indigenous Protected Area.

Parks and Wildlife scientist Ian Radford said the Mitchell Plateau was biologically significant and known as a mammal hotspot.

"While small to medium-sized mammals are declining across northern Australia in response to threatening processes such as fire, feral animals and disease, our survey at Mitchell Plateau showed overall mammal abundance and diversity has remained high in the area," Mr Radford said.

"We found good numbers of mammals including threatened species such as the northern quoll, golden bandicoot, golden-backed tree-rat and brush tailed rabbit rat, and other mammals such as scaly-tailed possum, northern brown bandicoot and the pale field rat."

The monitoring work was conducted under the Landscape Conservation Initiative, part of the State Government's

\$103.6 million *Kimberley Science and Conservation Strategy* and aligned with the *Wunambal Gaambera Healthy Country Plan*.

For the Uunguu rangers, the work also aligned with the Wunambal Gaambera Healthy Country Plan, an important conservation and land management project.

Tom Vigilante, Healthy Country Manager at Wunambal Gaambera Aboriginal Corporation, said the Mitchell Plateau surveys incorporated live trapping and release of animals.

"This year we also trialed intensive camera trapping as a new monitoring tool," Mr Vigilante said.

"We spotlighted a rare Kimberley brush-tailed phascogale and later recorded phascogales on camera traps placed in trees nearby - the first sighting of this species in many years giving us hope that this elusive species may still be widespread."

The monitoring field trip also provided training opportunities for young rangers involved with trapping work.

The monitoring survey was supported by Kimberley Land Council, WWF Australia and Lotterywest.



Cane toad sausages may save quolls



As part of a trial teaching native animals not to eat toxic cane toads, the Department of Parks and Wildlife is asking Kununurra residents to collect toads for the production of taste aversion sausages.

Parks and Wildlife cane toad program coordinator Corrin Everitt said research showed that feeding small cane toads to native predators such as goannas or giving northern quolls toad mince sausages made them feel sick.

"This experience leads to these predators avoiding toads when they subsequently encounter them," she said.

Ms Everitt said the Department, in partnership with the University of Sydney and other groups including the Balangarra Rangers, had been testing techniques to reduce the threat of invasive toads to native wildlife such as quolls and goannas.

"Rolling out taste aversion trials across large areas poses logistical challenges such as getting enough toads to make taste aversion sausages, ensuring they are attractive to native wildlife, transporting them to remote areas and then

distributing them in challenging weather, especially in the summer wet season when toads are spreading rapidly," Ms Everitt said.

"Kununurra residents can help us by collecting cane toads so they can be turned into the taste aversion sausages."

Professor Rick Shine from the University of Sydney – this year's winner of the NSW Scientist of the Year and Prime Minister's Prize for Science – will be working with Parks and Wildlife on this project, along with experienced researcher Georgia Ward-Fear.

"Various baits and small toads will be used in trials over the coming wet season and the results will be monitored so techniques can be improved," she said.

"Native species are able to learn to avoid toads provided an individual's first experience is with a small toad, not one of the large highly toxic toads.

"The goal is to ensure quolls, goannas and other toad-susceptible species continue to maintain robust populations after the initial impacts of the arrival of cane toads."



Above: Cane toad. *Photo – Rick Dawson/Parks and Wildlife* **Right above:** Cane toad sausages. *Photo – Jasper Kruse/Parks and Wildlife* **Right:** Northern quoll. *Photo – Lesley Gibson/Parks and Wildlife*



Aerial survey of Kimberley turtle beaches

More than 44,000 aerial photographs of the Kimberley coast have been scrutinised for information about threatened turtles as part of a Western Australian Marine Science Institution (WAMSI) project.

Above: Aerial view of the winter-nesting flatback turtle rookery at Cape Domett, north of Kununurra. *Image – WAMSI Turtle Project*

Information about nesting turtles gleaned from tracks seen in the images of more than 2500 islands and 1300 mainland beaches has been verified through 'ground truthing'.

The sea turtle project covers a massive area and is sweeping in its scope: there have been 15 flights and, over the course of 17 field trips, around 1300 unhatched eggs collected from nests, 75 dataloggers and six weather stations installed, 60 sand samples taken and satellite tags attached to 35 turtles.

The aerial and ground surveys are part of a sea turtle project that aims to identify when and where turtles nest, develop climate change models to predict how turtles might be impacted and work out relationships between different turtle populations.

Department of Parks and Wildlife senior research scientist Dr Tony Tucker said more than 90 per cent of turtle nesting

habitat in the Kimberley was accessible only by foot, boat or helicopter, posing significant challenges for field surveys.

"The aerial images taken during the summer and winter in 2014 have helped identify hotspots of higher density for follow-up by ground surveys, which began in 2015 and have continued throughout 2016," he said.

Tissue samples have been collected from about 900 turtles, including from an olive ridley turtle which is rare in WA.

"Genetic analysis will help us work out relationships between groups of nesting turtles and define breeding units for flatback, green, loggerhead and hawksbill turtles to protect and conserve these threatened species through effective management of habitats."

The sea turtle project team is working with 11 traditional owner groups which have assisted in the ground surveys

and are helping to establish how traditional and scientific knowledge complement each other.

Partners in the WAMSI Kimberley sea turtle project include Parks and Wildlife, The University of Western Australia, CSIRO, Griffith University and Pendoley Environmental. The project will provide a knowledge base for future monitoring and information to help understand if populations are increasing or decreasing.

It will also build capacity among indigenous ranger groups to enable ongoing monitoring. This assists in turtle management across the Kimberley, particularly in the new marine parks the State Government is establishing under the *Kimberley Science and Conservation Strategy*.



Taro control at Mt Hart

Above: After removal of Taro at Mount Hart. **Right:** Taro infestation in the Mount Hart waterways before treatment. *Photos – Karen Bettink/Parks and Wildlife*

Parks and Wildlife staff and the Wilinggin traditional owners are gaining the upper hand in the fight to eradicate the invasive weed taro or elephant's ears (*Colocasia esculenta* var. *aquatilis*) from Mount Hart in the King Leopold Ranges Conservation Park.

Taro chokes river systems, produces a foul-smelling sediment and outcompetes native species.

The species was originally planted at Mount Hart Homestead in 1980 and has since infested the Barker River.

The infestation spread 8km south along the river system, but was most dense near the homestead.

Since 2008 the Department of Parks and Wildlife and the Wilinggin traditional owners have put concerted

efforts into eradicating taro from the area using funding provided under the *Kimberley Science and Conservation Strategy*.

Methods have included manual removal of the weeds, and careful application of herbicides, while limiting environmental impacts.

A few years of trials to find the best method for control have contributed to the significant results of recent years.

This important work has been undertaken to improve the condition of the riverine habitat and to prevent taro from entering the Lennard River and its vast catchment, including tributaries to the coast and inland to Windjana Gorge National Park.

Thanks to the control effort, there has been a significant reduction in cover and distribution of taro, particularly near Mount Hart Homestead.

Along with cattle reduction, removing taro and natural regeneration of native vegetation has seen a dramatic improvement in habitat condition and resulted in the return of various wildlife species to the area.

Native fish, cherabin, mussels and bird life are abundant, while top order aquatic species such as freshwater crocodiles, water monitors and rakali (water rats) have reappeared in this stretch of the river, indicating a healthy ecosystem.

While the cover of taro has been significantly reduced, control will be ongoing for some time until eradication is achieved.



Taking nature to kids and kids to nature

October school holidays in the Kimberley saw some great community events, from Kununurra in the north to Eighty Mile Beach Marine Park in the south.

In Kununurra, Parks and Wildlife, the Save the Children aid and development agency and the Kangaroo Haven wildlife group came together with about 70 children and families to talk about local wildlife.

Mandy Watson from Kangaroo Haven showed off some rescued kangaroo and wallaby joeys, teaching the children what to do if they ever came across injured wildlife. Mandy has rehabilitated some 600 animals to date.

Jasper Kruse from Parks and Wildlife brought in some native species including pygmy and Stimson's pythons and advised how to tell venomous snakes from non-venomous snakes.

A demonstration for Save the Children from handler Andrew Rethus and Reggie the cane toad detector dog proved a hit, with Reggie locating several hidden toads around the building.

The invasive cane toad also made an appearance at St Joseph's Catholic Primary School and at an out-of-school activity run by Save the Children for under 12s. The children learned correct handling techniques and engaged the scientist within by looking at tadpoles through a microscope.

The invasive cane toad also made an appearance at St Joseph's and Save the Children after school care for children to learn correct toad handling techniques and engage the scientist within by looking at tadpoles through a microscope.

Further south, there was plenty of school holiday fun to be had at Eighty Mile Beach and Pardoo Station Caravan Parks, where Parks and Wildlife and Fisheries staff helped children embrace their adventurous side by running several marine activities.

The children immersed themselves in a simulated fishing activity, fish dissections, boomerang painting and throwing lessons, the creation of a giant turtle life cycle, outdoor movie nights, a sand sculpture competition and un-fantastic plastic calico bag painting.

The children enjoyed meeting the Ngarla and Nyangumarta Parks and Wildlife rangers and learning about their culture.

Top Right: Children met some rescued joeys from Kangaroo Haven. **Right:** School holiday activities at Eighty Mile Beach.
Photos – Parks and Wildlife

