Kimberley Science and Conservation News

October 2016

Department of **Parks and Wildlife**

Kimberley biodiversity gets new protection

During my travels around the Kimberley I have never failed to be amazed by the remarkable natural beauty and enormous cultural significance of the region. I recently visited Horizontal Falls to experience first-hand one of these areas that the Liberal National Government is working to protect.

In fact, between now and the end of the year, the State Government will create a number of new marine and terrestrial parks in this spectacular region.

Just recently we created the third marine park under the *Kimberley Science and Conservation Strategy*. The Yawuru Nagulagun / Roebuck Bay Marine Park is an immensely significant area for local Broome residents and the Yawuru traditional owners, with whom the park and surrounding areas will be jointly managed.

Our drive to protect the inherent nature and culture of the Kimberley will be significantly helped by the passing of history-making new environment laws.

The new *Biodiversity Conservation Act 2015* has overhauled WA's conservation legislation and delivered conservation powers to an extent never before seen in this State.

It will provide a real deterrent to those considering serious wildlife crimes, such as smuggling native fauna out of WA, with maximum penalties increased from $4000 to up $500,000.

This new legislation backs up the establishment of huge new parks and on-ground works under the strategy by strengthening protection for native species in the Kimberley. A provision in the Act gives dolphins, dugongs and whales special protection, which is highly relevant to the new Yawuru Nagulagun / Roebuck Bay Marine Park and the entire Kimberley.

The State Government is delivering on its significant investment in the Kimberley and achieving milestones the like of which have never been seen before in the State.

Albert Jacob MLA
Minister for Environment

Above: Humpback whale calf.
Photo - Rick Dawson/Parks and Wildlife

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Protection for **world-class waterbird wonder** at Broome's Roebuck Bay

A world renowned conservation, cultural and ecotourism destination has been formally recognised with the creation of the Yawuru Nagulagun / Roebuck Bay Marine Park in the waters around Broome.

Releasing 10-year management plans for the marine park and adjacent Yawuru Birragun Conservation Park in Broome on October 7, Premier Colin Barnett said the new parks would be jointly managed with the Yawuru people, boosting conservation and tourism in the west Kimberley.

"The Liberal National Government has committed more than $103 million to stimulating growth in the region while protecting its natural attractions, through the *Kimberley Science and Conservation Strategy*," he said.

"The creation of these parks gives Yawuru people the opportunity to be involved in all facets of management of the parks, to be employed to work on their traditional lands and waters and to have opportunities to develop new cultural and heritage tourism."

The Premier said the new parks would conserve biodiversity values while continuing to encourage visitors and locals alike to enjoy activities such as boating, fishing, kayaking, viewing dinosaur footprints, birdwatching, walking and whale watching.

"The marine park will also build upon the Government's previous decision to remove commercial gillnetting from Roebuck Bay and ensure the recreational fishing experience is world class and the values of the bay are conserved."

Environment Minister Albert Jacob said Roebuck Bay was an internationally significant wetland and one of the most important feeding grounds for migratory shorebirds in Australia – boasting possibly the greatest diversity of shorebird species for any site on the planet.

"Roebuck Bay's biodiversity is extensive and the marine park provides enhanced protection for threatened species such as the snubfin dolphin, flatback turtle, olive ridley turtle and the specially protected dugong among others," he said

"The plans afford a high level of protection for all areas of the parks providing an integrated 'whole of country' approach to management of the Yawuru conservation estate."

Top: Roebuck Bay tide receding, birds feeding.
Above: Huge flock of knots. *Photos – Hazel Watson*

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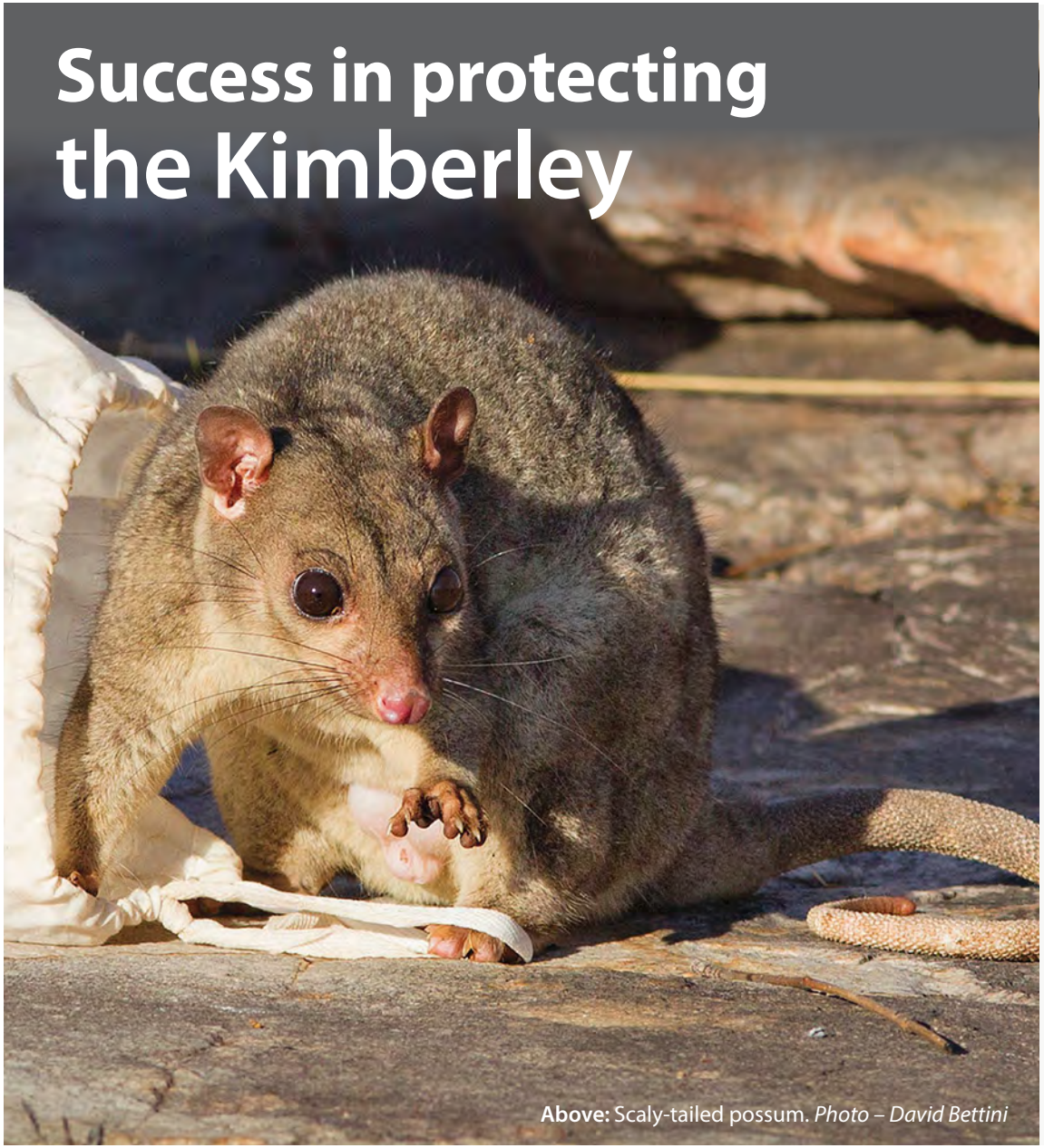
Success in protecting the Kimberley



Above: Scaly-tailed possum. *Photo – David Bettini*

Four years of comprehensive monitoring has shown increased management of fire, feral animals and weeds under the *Kimberley Science and Conservation Strategy* has achieved positive outcomes for biodiversity in the north Kimberley.

Management of fire across up to 65,000 square kilometres of the north Kimberley has made inroads into arresting the boom and bust fire regimes that dominated the region before the implementation of the strategy.

Late season fires have been reduced by almost 50 per cent, resulting in increased patchiness of unburnt vegetation, which provides important habitat for threatened and iconic wildlife such as small mammals and finches.

Weed management has reduced the extent of invasive grader grass (*Themeda quadrivalvis*) in the Mitchell River area by more than 50 per cent. Work to control the invasive weeds gamba grass (*Andropogon gayanus*) and rubber vine (*Cryptostegia grandiflora*) should see these Weeds of National Significance eradicated from the Kimberley in the medium term.

The Kimberley's biologically important rainforest patches, which are reservoirs of tropical plants and animals, some of which are unique to the region, remained stable from 2012 to 2014, with no evidence of degradation. There is also evidence to suggest vegetation cover elsewhere is increasing, improving habitat for wildlife.

While biodiversity is declining elsewhere in northern Australia, the diversity and abundance of small mammals in the Kimberley has been retained and it remains one of only two areas in mainland Australia with no recorded mammal extinctions.

Monitoring suggests the size, frequency and intensity of fires still needs to be reduced – in particular fire frequency. Research indicates this has the added benefit of reducing the impacts of feral cats, which are more efficient hunters in more open habitats. Monitoring also suggests the impacts of large feral herbivores, particularly cattle, still need to be reduced.

For the full report please see https://www.dpaw.wa.gov.au/images/conservation-management/kimberley/dpaw_2013-14_lci_meri_report.pdf. Another report, summarising work done in 2015 and 2016 is due for release in early 2017.

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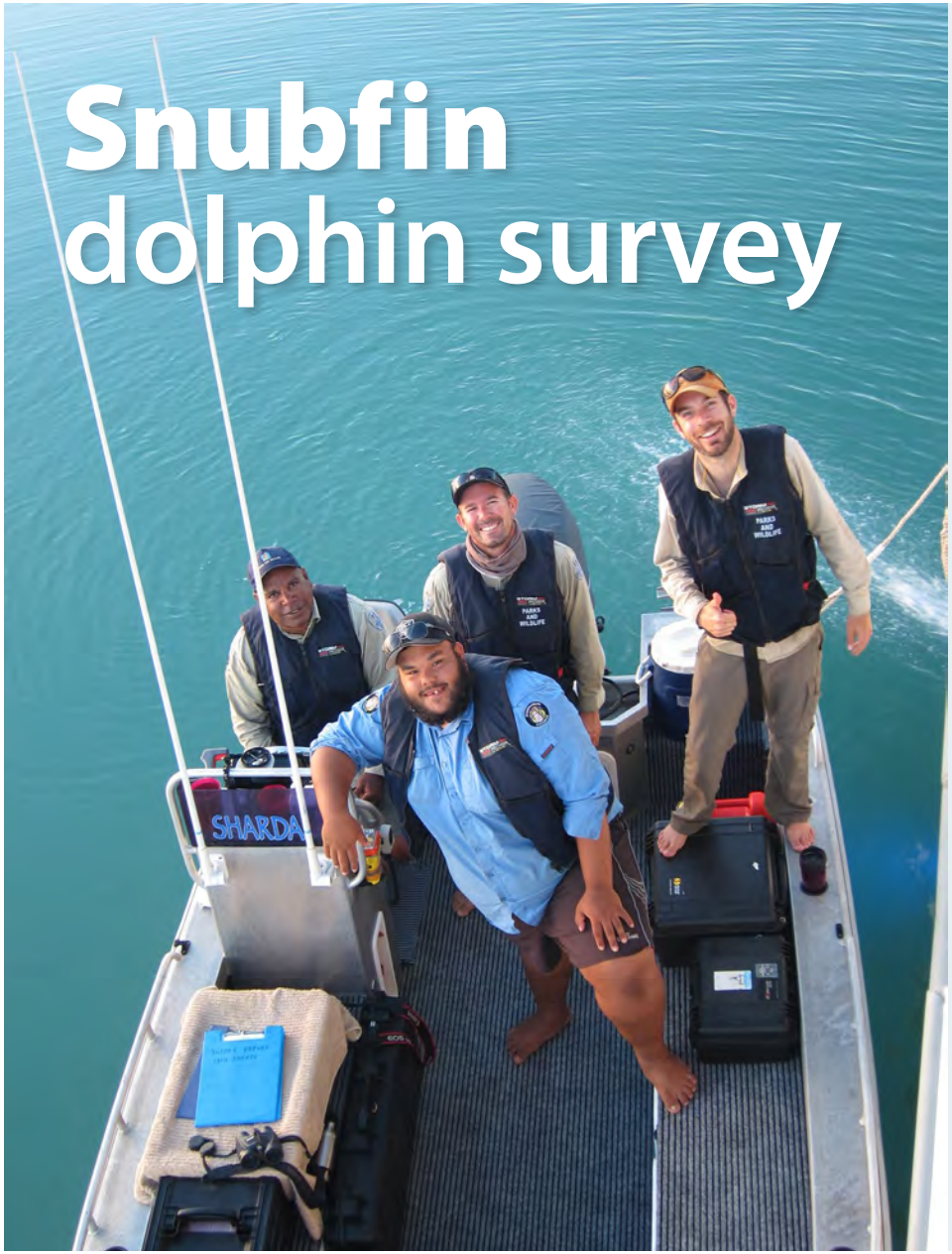
Snubfin dolphin survey



An eight day survey in Lalang-garram / Camden Sound Marine Park found an abundance of *jigeedany* or dolphins in the park with 17 pods of snubfin dolphins, 14 pods of Australian humpback dolphins, two bottlenose dolphin pods and one pod of spinner dolphins recorded.

Parks and Wildlife rangers, Dambimangari ranger Pete O'Connor and Alex Brown from Murdoch University's Cetacean Research Unit conducted 450km of boat survey effort in the park.

The survey focused on the popular Prince Regent River, which appears to provide important habitat for Australian snubfin and Australian humpback dolphins – both of which are key indicators of marine park health according to the management plan.

The trip's aim was to carry out an initial survey and develop an ongoing monitoring program, to allow park managers to monitor the population status and habitat use of tropical dolphin species in key parts of the park.

The *jigidan* or Australian snubfin dolphin (*Orcaella heinsohnii*) was only recognised as a new species in 2005. It is unique to northern Australian waters, where it inhabits rivers, estuaries and coastal waters.

It has a rounded forehead with no beak, unlike most other dolphin species in Australia. It has a particularly small dorsal fin (the reason for its common name), a distinct crease around the neck, which is quite mobile, and an upturned mouth, that makes it appear to be smiling.

Australian snubfin dolphins use a technique known as 'spitting' to catch fish: as the water splashes it diverts the fish in different directions, behaviour that was observed during the survey.

Left: The survey crew, Adrian Lane, Daniel Barrow, Alex Brown and Pete O'Connor, ready for work. *Photo - Michael Hourn*

Above: A snubfin demonstrates its unique spitting behaviour. *Photo - Daniel Barrow*

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Sampling for a Great Kimberley Marine Park

Scientists on a mission to better understand the ecological biodiversity that thrives in Australia's remote north-west recently completed the fourth of five field trips in the proposed Great Kimberley Marine Park.

The *Solander* voyages include researchers from AIMS, the Western Australian Museum, CSIRO and Curtin University and is a Western Australian Marine Science Institution (WAMSI) project funded under the *Kimberley Science and Conservation Strategy*.

The surveys are sampling the proposed Great Kimberley Marine Park, with a focus on Lalang-garram/ Camden Sound Marine Park and the Cape Bougainville-Cape Londonderry region of the proposed North Kimberley Marine Park.

The results will be added to data collected from a recent field trip to the islands of the Bonaparte Archipelago in the proposed North Kimberley Marine Park to investigate the coral reefs, sponges and other marine life.

Researchers map the depth and geomorphology of the seafloor using multi-beam sonar technology, examine habitats using towed video cameras, measure the water conditions (e.g. light penetration levels, temperature, and salinity levels) and tidal ranges, and collect samples of marine plants and animals from the seafloor using a small sled.

The ship-based research spent most of the time in navigable waters deeper than 10m and most sampling focused on the depth band between 15-50m, where little information is available from previous Kimberley studies. These areas are often turbid and sponges were the most common and largest organisms encountered, with echinoderms, soft corals and bryozoans also present.

The survey results are still being analysed but indicate that most of the deeper Kimberley waters often have low levels of large marine invertebrates, although quite diverse and abundant communities are able to establish in places where rocks and ridges provide places to settle and hold on.

It is likely that the collections will include dozens of species of marine plants and animals that are new to science.

"We expect the project will reveal much about life on the seabed in this region and make a useful contribution to planning and management," WAMSI Project leader, Dr Andrew Heyward (AIMS) said.

"The Kimberley region has a vast array of habitat types with a stunning array of biodiversity, much of which has not been studied or collected before," CSIRO scientist Dr John Keesing said.

Shoreline areas and fringing reefs with abundant corals and plants that abound throughout the Kimberley in areas less than around 15m are yet to be surveyed in any detail from the large ship-based field expeditions.

Future work is being planned, in collaboration with traditional owners, to gather additional nearshore data on some of these key shallow water habitats.

Top right: Holothuria Banks, north of Cape Bougainville.

Right: Sponges from the seafloor.
Photos – Karen Millar/AIMS

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Wet season attack on problem plants

Left: Gamba grass control at El Questro Station.

From early January to April, Parks and Wildlife staff work with indigenous ranger groups, pastoralists and traditional owners to control weeds in national parks and other remote areas across the Kimberley, including unallocated Crown land, pastoral leases and some Kimberley islands.

The wet season is the best time to control weeds because the plants are actively growing, but it is also the most difficult time of year to access remote sites. Some work can only be done by helicopter with rangers often having to live on site during part of the wet - and it makes for some hot and challenging work.

Weed control carried out this wet season under the State Government's *Kimberley Science and Conservation Strategy* included removal of gamba grass (a Weed of National Significance) at El Questro Station.

Gamba grass (*Andropogon gayanus*) is a tropical African grass to four metres tall that is a very serious weed of the Northern Territory.

It forms dense stands that dry off late in the season and can fuel intense hot late dry season fires that can kill even relatively fire tolerant woody plants.

It is present in Western Australia as a single population on El Questro Station, where a combined effort by the Departments of Agriculture and Parks and Wildlife, El Questro staff and the Wunggurr and Nyaliga Rangers is attempting to eradicate this species completely before it can spread.

Grader grass (*Themeda quadrivalvis*) is also being controlled in the north Kimberley. While the species is already widely present on more than 400km of roadsides, settlements, stations and some conservation areas the aim is to stop further expansion and reduce infestation levels with some local eradication.

Work to control mint weed (*Hyptis suaveolens*) on Sir Graham Moore Island has been carried out by Balanggarra traditional owners with Parks and Wildlife.

Weed control is prioritised according to the potential impact of a particular species on the environment, the size of the infestation, and the feasibility of eradication or containment.

Department of Parks and Wildlife

Island animals survive toads

Endangered northern quolls and a range of reptile species are surviving on Adolphus Island, in the mouth of the Cambridge Gulf near Wyndham, despite the presence of toxic cane toads.

Environment Minister Albert Jacob said 35 remote cameras - installed by the Department of Parks and Wildlife on the island - had captured images of quolls, monitors (goannas) and pythons in recent months.

"Evidence of native species persisting on Adolphus Island is good news," Mr Jacob said.

"Key species susceptible to cane toad poison - such as yellow-spotted monitors, northern blue tongues, twilight monitors, spiky-tailed monitors and northern quolls - are surviving, although we know toads have been present on the island for about four years.

"Researchers are not sure yet why these native species are able to overcome the effects of cane toad colonisation, but it is a really positive sign considering there have been devastating impacts on wildlife in other parts of Australia.

"It's a good news story for Adolphus and provides important information which will help the Liberal National Government in future Kimberley island management."

The Minister said the department, in conjunction with the Balanggarra Rangers and traditional owners, would continue monitoring northern quoll and cane toad populations on the island as part of the *Kimberley Science and Conservation Strategy*.

Parks and Wildlife staff and Balanggarra Rangers will visit Adolphus again this month for camera maintenance and to look for more evidence of cane toads.

"The work on Adolphus tells an important story about impacts of cane toads on native species and provides information about how cane toads survive on remote, relatively dry islands in the Kimberley," Mr Jacob said.

Above: Northern quoll on Adolphus Island. *Photo – Parks and Wildlife*

Information current as at October 2016.
This publication is available in alternative formats on request.

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