



National Environmental
Research Program

NORTHERN AUSTRALIA HUB



kakadu[®]
NATIONAL PARK

**Guide to Threatened
species of Kakadu
National Park**
including other plants and
animals of interest

By Anne O'Dea



This guide is for Kakadu National Park staff and bininj (local Traditional Owners and other Indigenous people of Kakadu).

The guide highlights listed threatened species and some of the other significant plants and animals of Kakadu National Park at the time of printing. There are many more species that contribute to the rich biodiversity of the park, but these represent many of the species that are least often seen, or are significant to bininj.

Please report sightings of species that are not often seen to Kakadu National Park staff.

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Cover photo by Anne O’Dea

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Habitats of Kakadu



Gunwarde (Stone country)



Mangarreh (Monsoon forest)



Manberrk (Woodland)



Kulabarllubarl (Rivers and wetlands)



Gurrula (Coast and tidal flats)



Some threats to wildlife and plants in Kakadu



Cane toads have poison glands on their back which kill some animals. Their eggs and tadpoles are also poisonous. Cane toads can be trapped or collected, but there are too many to control. Researchers are looking for ways to control toads.



Pigs dig up the ground with their strong snouts and damage homes for animals like turtles and file snakes. Pigs are shot in large numbers when possible, but there are still many. Bininj sometimes hunt them for food.



Buffalo damage wetlands by wallowing in mud and killing plants. Billabongs can dry up. Buffalo are generally controlled by shooting. Bininj sometimes hunt them for food.



Cats hunt many small mammals, birds, frogs, snakes and lizards. Cats are difficult to shoot or trap and there are many more than it seems. They should not be kept as pets in Kakadu. Researchers are trying to find out how much effect cats have.



Weeds choke waterways, creeks, billabongs and the bush. They can spread from your yard, bush tracks, and camping areas. Weeds can be controlled by chemical sprays, pulling them out or burning them.



Hot fire can burn animal homes, nesting places and food – or even the animals themselves. Good fire management by park rangers and local bininj can protect animals and their habitats.



Climate change may cause sea level to rise and salt water to flow into fresh water. This would change Kakadu and habitats of animals and plants. Kakadu will withstand climate change better if feral animals, weeds and fire are controlled.



Motor vehicles cause a lot of animal deaths on our roads. Slow down at dusk and dawn.



Threatened species

KEY

'Threatened' means a species is at risk of disappearing forever.

C

Critically endangered species have an extremely high risk of extinction. Drastic measures are needed now.

E

Endangered species are in danger of becoming extinct in the near future. They are almost completely gone.

V

Vulnerable species are likely to become endangered in the near future.

D

Data deficient means there is not enough information to tell whether populations are decreasing, stable or increasing.

N

Not listed means they are not recognised as threatened, but most animals and plants in this book may be going down in numbers.

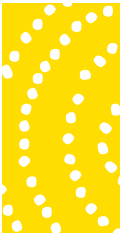
Traditional owner concern

Traditional owners are concerned about many animals - especially those that are important to culture or for bush tucker.

Some traditional owners across Kakadu were asked to rate their concern for animals and plants in this book. These symbols show what most people thought about each species.



most concern



some concern



least concern or don't know the species



Tips to pronounce Gundjeihmi names

Pronounce

a as in father

b as in English except at the end of syllables b sounds like p

d as in English except at the end of syllables d sounds like t

dj as in jump

e sounds like air

g k as in skip (g is used at the start of syllables, k at the end of syllables)

h glottal stop as in oh'oh

i as in bit

l m n w as in English

ng as in singing (can start a word)

nj ny as in goodonya (start of syllable) or as in onion (end of syllable)

o oo as in poor

r as in English unless followed by r d l or n

rd rl rn r as in card, curl or barn when pronounced as in North American English

rr like tt in butter when said quickly

u as in put and never as in up

y as in yellow

These combined letters (diphthongs) have two sounds. The first vowel sound moves towards the sound of the second. English examples include boy and allow

au sounds like now

ai sounds like die

eu sounds like air-oo (said fast)

ei sounds like they

iu sounds like phew

ou sounds like show

oi sounds like oil

ui sounds like gooey

Tips to pronounce Kunwinjku names

Pronounce

a as in father

b as in English except at the end of syllables b sounds like p

d as in English except at the end of syllables d sounds like t

dj as in jump

e sounds like air

h glottal stop as in oh'h

i as in bit

k as in skip

l m n w as in English

ng as in singing (can start a word)

nj ny as in goodonya (start of syllable) or as in onion (end of syllable)

o oo as in poor

r as in English unless followed by r d l or n

rd rl rn r as in card, curl or barn when pronounced as in North American English

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These combined letters (diphthongs) have two sounds. The first vowel sound moves towards the sound of the second. English examples include boy and allow

aw sounds like now

ay sounds like die

ew sounds like air-oo (said fast)

ey sounds like they

iw sounds like phew

ow sounds like show

oy sounds like oil

uy sounds like gooey



Tips to pronounce Jawoyn names

Pronounce

a as in father

e as in egg

i as in bit

o as in home

u as in put

m, n, t,w and y as in English

j as in jet, church

k and g as in go, skip

r as in English unless followed by r t tt l or n

t as in dog , hot

jj as in catcher

kk as in tricky

ng as in singer

ny as in onion

p as in but at the start of a word, or as in cap in the middle of a word

pp as in pepper

rr rolled r

rl rn rt and rtt as in curl barn part and barter when pronounced like an American

tt as in mitten

' represents a glottal stop as in oh'oh

Kakadu seasons

These are Gundjeihmi season names. Names and seasons in other languages are different.



How to use this book

Habitat (where it lives) - see key on page 5

Gundjeihmi (G) Kunwinjku (K) Jawoyn (J) Iwaidja (I) Limilngan (L) name

Njanjma (G) Djabbo (K) Jappo (J) Kabarrakan (I) Dirdatj (L) 33

Northern quoll

Dasyurus hallucatus

Scientific name Common name



Photo Anne O'Dea

Njanjma argued with Dird (moon) about humans coming back to life. Angry people threw burning sticks at Njanjma for arguing which made white spots. Now Dird comes back every month, but njanjma dies like other creatures.

Traditional story

Njanjma live in woodlands, especially near rocky outcrops. They shelter in hollow logs, tree hollows or rock crevices by day. Males usually only live for one year, then die after a hectic mating season in Yekke.

Local and important information

Njanjma eat almost anything, unfortunately even cane toads. Their numbers were already declining before cane toads, but since cane toads arrived they have almost disappeared in the Top End and could become extinct. If some small groups survive, like the ones in East Alligator area, they will be very important as toad numbers go down and some quolls learn not to eat toads.

Size: 12 to 31cm plus 12 to 34cm tail



Traditional owner concern



Risk of disappearing

Listed by EPBC Act and/or NT



Probable or known threats



Species group





Mammals

Kakadu dunnart

Sminthopsis bindi



Photo Ian Morris

N



Not much is known about the tiny Kakadu dunnart. They live in gravelly, hilly areas with woodlands. They are a light tan colour with black hairs and white underparts and feet. They probably eat crickets, caterpillars and large moths.



Size: 5 to 8cm plus 6 to 10cm tail

Sandstone antechinus

Pseudantechinus bilarni



Photo Anne O'Dea



These mulbbu have a long pointed nose and normally hunt insects at night, but sometimes by day. They are grey-brown with a dark stripe down the middle of the head and an orange patch around their large ears. They live in bouldery stone country.

Size: 8 to 10cm plus 9 to 12cm tail



Kakadu pebble-mouse

Pseudomys calabyi



Photo Michelle Hatt

These mulbbu are grey-brown with a white underbelly from chin to tail. They eat mainly grass seeds on grassy, gravelly slopes where they build a burrow system and block the entrance with small pebbles.

There are very few records of these little mulbbu that live in Kakadu and Litchfield national parks but Kakadu rangers took this photo in 2010 when they found it under an oil drum, and two more were recorded by remote camera in 2011.

Size: 7 to 10cm plus 7 to 10cm tail

Common rock rat

Zyzomys argurus



Photo Ian Morris



These golden-brown to grey-brown mulbbu have white bellies and are smaller than Arnhem rock rats. They have little hair on the fat base of the tail and more at the end. The top of their feet are white. They eat seeds, plants, insects and fungi. They sometimes have a favourite place to eat where you can see piles of chewed seeds.

Size: 8 to 10cm plus 9 to 13cm tail



Arnhem rock rat

Zyomys maini



Photo Anne O'Dea



These fairly large, brown rats have white underparts and long whiskers on the tip of a curved “Roman” nose. Their tails have a fat base and easily break, so many have little or no tail. They eat seeds and fruits in stone country rainforest gullies and creeks. It is important to protect these rainforests from fire.

These mulbbu are only found in west Arnhem Land. Kakadu is the only national park they live in and makes up about one third of the known range.

Size: 10 to 17cm plus 11 to 15cm tail

Brush-tailed rabbit rat

Conilurus penicillatus



Photo Kym Brennan

Barri have a black, or sometimes white tuft of hair on the end of a long tail. They shelter in hollow trees and logs, pandanus trees or sand palms. They eat mainly grass seeds, some fruits, termites and leaves. On the ground, barri jump quickly with tail held high and flicking from side to side. They make a growling sound if threatened.

After fire barri are easily hunted by cats and other predators. They were really common in the early 1900s, fairly common in the 1970s and in Kakadu (one of the last known populations in mainland Northern Territory) only two have been seen in the last few years.

Size: 15 to 18cm plus 18 to 22cm tail



Delicate mouse

Pseudomys delicatulus



N



Photo Kym Brennan



These tiny mulbbu have a rough grey-brown coat, white or grey underparts and white feet. They live in open spinifex or grassy, sandy areas where they eat seeds, fruits, plants stems and some insects.

Delicate mice live across tropical Australia.

Size: 5 to 7.5cm plus 5 to 8cm tail



Fawn antechinus

Antechinus bellus



Photo Ian Morris



Fawn antechinus are grey with a cream or light grey belly. They shelter in hollows in trees and logs and seem to prefer tall forest. They hunt for insects on the ground and in trees. The mating season is in late Wurrngeng, then most males die. They are only found in the Top End.

Size: 11 to 15cm plus 9 to 13cm tail



Ngabudj (G) Dayhdayh (K)

Northern hopping-mouse

Notomys aquilo



Photo Ian Morris

V

NT & EPBC



Ngabudj live in grassland, shrubland and open forests, mostly in sandy areas near the coast, but occasionally further inland. They eat mostly seeds and shelter in burrows.

There are some old records from Kakadu, and more recent records from Djelk area.

Size: 9 to 12cm plus 14 to 18cm tail

Pale field-rat

Rattus tunneyi



In the beginning, dokkorn was a man who played didgeridoo while frog man sang. Now they are animals.

Photo Anne O'Dea



Dokkorn have a whitish belly and feet. Their tail has dark scale rings and is shorter than the head and body. They live in tall grassland, usually near a creek, and breed in Wurrngeng. They need loose, sandy soil to dig shallow burrows where they spend the day. Dokkorn eat grass stems, roots and seeds – especially speargrass seeds.



They live across the wetter north of Australia and numbers have gone down a lot.

Size: 12 to 19cm plus 8 to 15cm tail



Grassland melomys

Melomys burtoni



Photos Anne O'Dea

N



Melomys have a thick neck, are buff to pale orange in colour and are the only mulbbu with a mosaic scale pattern on the tail. They eat grass, berries and insects on the ground or in trees and breed in Wurrngeng.

Melomys live in many habitats and are the most commonly seen mulbbu around Kakadu woodlands.

Size: 11 to 15cm plus 10 to 15cm tail

Common planigale

Planigale maculata



Photo Ian Morris

Planigales have a wide flat head with a pointed nose. These small mulbbu live in dense scrub near floodplains where they hunt for insects and lizards up to their own size. There is probably a stone country planigale that is different to the common planigale but hasn't yet been described as a new species because they keep escaping when someone thinks they've found one.

Size: 6 to 10cm plus 5.5 to 9.5cm tail



Red-cheeked dunnart

Sminthopsis virginiae



Photos Ian Morris

N



These mulbbu have very large ears and a ginger-orange face. They probably nest on the ground under dense plants such as pandanus fronds or thick grass. They eat insects and some small lizards in grasslands in and around swamps.

Red-cheeked dunnarts live in tropical Australia.

Size: 8 to 13cm plus 9 to 13.5cm tail

Dusky rat

Rattus colletti



Photo Ian Morris

Dusky rats have thick black and brown fur and a tail shorter than their head and body length. They live on the floodplains of tidal rivers where they can be seen on floodplains at night diving down cracks to hide. They eat grass stems and sedge roots. They breed during Wurrngeng and numbers boom after good rain in Gudjeuk, which means plenty of food for borlokko (water pythons).

Size: 12 to 20cm plus 9 to 15cm tail



N



Water mouse

Xeromys myoides



Photo Kym Brennan

V/D

EPBC/NT



These soft, grey mulbbu with a white belly, build large mud nests in trees or on the ground. They move from their nest during the night at low tide to search among mangrove roots, hollow trunks and logs for crabs and shellfish.

There has been recent survey work in Kakadu on West Alligator Head and Field Island, but no conclusive evidence found, although one was probably seen at Field Island in 2011. If still present in Kakadu, this would be the only protected area where they live in the Northern Territory.

Size: 8 to 13cm plus 7 to 10cm tail

Water rat

Hydromys chrysogaster



Photo Anne O'Dea

Yirrkbadj have a distinctive smell and usually live near permanent fresh or salty water. They have a thick, white-tipped tail, webbed hind feet, waterproof fur and are great swimmers. They eat on feeding platforms leaving a midden of pieces of insects, fish, crustaceans and mussels, frogs and small birds. They make their nests at the end of tunnels in river banks or sometimes in logs. They can flip cane toads to eat them safely.

Size: 23 to 37cm plus 22 to 35cm tail



Golden-backed tree-rat

Mesembriomys macrurus



Photo Ian Morris



Gordberr are pretty similar to bakkadji (black-footed tree-rats) but a bit smaller with more white in the long tail. They eat flowers, fruits, insects, shoots and leaves in trees and on the ground. They sleep by day in tree hollows and dense trees like pandanus.

The only confirmed record of gordberr in Kakadu National Park was in Deaf Adder Gorge in 1969, but they may have already vanished from there. The Kimberley is the last stronghold of gordberr.

Size: 18 to 25cm plus 29 to 36cm tail



Northern quoll

Dasyurus hallucatus



Photo Anne O'Dea

Njanjma argued with Dird (moon) about humans coming back to life. Angry people threw burning sticks at Njanjma for arguing which made white spots. Now Dird comes back every month, but njanjma dies like other creatures.

Njanjma live in woodlands, especially near rocky outcrops. They shelter in hollow logs, tree hollows or rock crevices by day. Males usually only live for one year, then die after a hectic mating season in Yekke.

Njanjma eat almost anything, unfortunately even cane toads. Their numbers were already declining before cane toads, but since cane toads arrived they have almost disappeared in the Top End and could become extinct. If some small groups survive, like the ones in East Alligator area, they will be very important as toad numbers go down and some quolls learn not to eat toads.

Size: 12 to 31cm plus 12 to 34cm tail



Ganmar (J) Marduny (I)

Golden bandicoot

Isodon auratus



Photo Ian Morris

V/E

EPBC/NT



Golden bandicoots are small. They shelter during the day mostly in grassy plant tussocks. They can cover areas up to 10 hectares each night looking for invertebrates to eat.

Golden bandicoots lived in and around Kakadu before the 1980s, but now live only on a few islands and a small area of rugged sandstone in the north-west Kimberley. If they are still in Kakadu, then it is very important to find and protect them.

Size: 19 to 29 cm plus 8 to 12cm tail

Yok (G,K) Yowok (J) Urugalitjbagi (L)

Northern bandicoot

Isoodon macrourus



Photo Ian Morris

Yok are usually seen alone, except mother and her young. Males sometimes fight over their territory. Yok dig for insects, yams fruit and seeds leaving little holes in the ground. During the day, yok shelter on the ground under dense plants.

Size: 30 to 47cm



N



Bakkadji (G,K) Parrppom (J) Luwarli (L)

Black-footed tree-rat

Mesembriomys gouldii



Photo Ian Morris

V

NT



Bakkadji have a white tuft on the end of their long tails.



They eat seeds (especially pandanus), fleshy fruit, grass, flowers and some invertebrates in trees or on the ground.



They also like to nip the seed pods off northern grevillea and carry them back to a safe place to eat. Bakkadji build bulky grass nests in hollow trees and logs.

Size: 26 to 32cm plus 32 to 42cm tail

Wumbu (G,K) Weng (K) Wombo (J)

Northern brush-tailed phascogale

Phascogale pirata



Photo Ian Morris

In his story, wumbu drops rocks on humans.

Photo Anne O'Dea



Wumbu's black bottle brush tail makes them unmistakable. Wumbu hunt in trees for invertebrates – especially spiders. They also drink nectar from flowering trees. They breed in Wurrngeng after which the males die. Baby wumbu stay in their tree hollow nest for five months.

The number of phascogales in the Northern Territory has been decreasing for a long time, but no one knows why. They were once often seen in places like Jabiru and Jim Jim Ranger Station. Only a few have been seen in Kakadu in the last few years.

Size: 16 to 23cm plus 17 to 22cm tail



Rock ringtail possum

Petropseudes dahli



Photo Anne O'Dea



Photo Ian Morris

Dark red urine stains of djorrkkun on rocks are described as 'the rock possum hitting himself on the head in ritual grief'.

Djorrkkun climbs trees to feed at night. In a spotlight their eyes shine bright red, but unlike most possums, they often retreat to a tree or a rock ledge rather than freeze when caught in the light. They eat flowers, fruits and leaves and breed any time of year.

Size: 33 to 38cm plus 20 to 27cm tail

Djebuyh (G,K) Dukula (K) Wirk (J) Mungarrk (I)
Lulikbi dinyayan (L)

Northern brushtail possum

Trichosurus vulpecula arnhemensis



Photo Anne O'Dea



Photo Ian Morris



N



Djebuyh spend the day in hollow, dead branches, tree trunks, fallen logs, rock cavities, or even hollow termite mounds. They eat leaves, flowers and fruits.

Size: 35 to 45cm plus 25 to 35cm tail



Lambalk glider

Petaurus sp



Photo Anne O'Dea



Most lambalk live in groups of up to seven adults and their young sharing a leaf nest in a tree hollow. They eat insects, nectar, pollen, honey from sugarbag and sap. Though small, lambalk are not afraid to defend their food against an intruder – even djebuih. Some gliders have a range of calls, including a shrill yapping that warns others of danger such as an owl or cat.

Recent research shows that lambalk are not sugar gliders as commonly thought. They may be a small squirrel glider or another type of glider.

Size: 15cm plus 22.5 cm tail



Badbong (G,K) Maramo & Torriya (J) Itbilinyngan (L)

Short-eared rock-wallaby

Petrogale brachyotis



Photo Ian Morris



N



Badbong live in rocky hills and gorges in the northern parts of Northern Territory and Western Australia. They are bigger than their close relative, nabarlek, and carry their tail lower. They are generally grey-brown with white areas around the face and legs.

Badbong are often seen around Ubirr.

Size: 45 to 55cm plus 32 to 55 cm tail



Nabarlek (G,K)

Narbarlek

Petrogale concinna

Female

Male

Photos Ian Morris

V

NT



Nabarlek look a lot like badbong (short-eared rock-wallaby) but are smaller, have silver flecks and a shorter tail which they hold curved up when they hop. In Wurrngeng (dry season), they shelter from the sun in sandstone crevices and caves during the day and feed mainly at night. During Gudjeuk (wet season) nabarlek bask on rocks for up to three hours after dawn and feed for several hours before dark.

Size: 29 to 36 cm plus 26 to 33cm tail

Barrk & Djugerre (G) Barrk & Djukerre (K) Parrk & Juwerre (J) (male & female) Murdumburn (I)

Black wallaroo

Macropus bernardus



Photo Ian Morris



N



Barrk live in steep, rocky country in Kakadu and Arnhem Land. They are the smallest wallaroo, but heavily built. Males (barrk) are dark brown to black. Females (djugerre) are grey with dark paws, feet and tail tip and are much smaller. Not much is recorded in books about barrk, but a report written by scientists who spoke to elders lists many plants they eat.

Barrk are often seen at Nourlangie.

Size: up to 73 cm plus 64cm tail



Wularla (K) Jotet (J)

Spectacled hare-wallaby

Lagorchestes conspicillatus



N



Photo Ian Morris

These hare-wallabies have rough brown fur with white tips and red-brown “spectacles” around their eyes. They eat shrubs and don’t drink water.

Wularla are rare in Kakadu and the Northern Territory but more common in Queensland. They also live in savannas of Papua New Guinea.

Size: up to 47cm plus 49cm tail



Northern nailtail wallaby

Onychogalea unguifera



Photo Ian Morris



N



These sandy coloured nailtail wallabies eat leaves, herbs and grass, especially near blacksoil plains. They are named for the nail like spur on their tails. They were once called organ grinders because their front legs circle around when they move fast. They look similar to gornobolo (agile wallabies) but have a dark stripe down the spine. They are very fast so rarely end up as bush tucker.

Djoded are widespread, but were always rarely seen in Kakadu. Look out for them on the Munmarlary and West Alligator Head roads.

Size: up to 60cm plus 66cm tail



Gowarrang (G) Bambirl or Ngarrbek (K) Kowarrang (J)
Ngaldanan (I) Mumuligan mamban (L)

Echidna

Tachyglossus aculeatus



N



Droppings

Gowarrang woman and al mangiji (long neck turtle) man fought about her baby. She threw stones that became his turtle shell. He threw spears that became her spines.

Photo Ian Morris



Gowarrang mainly eat spinifex harvesting termites that make mounds on sandstone. This explains the long, sandy droppings that are a good sign gowarrang have been around. Gowarrang are most active in Wurrngeng.

Gowarrang in Kakadu are mostly seen around rocky hillsides where they can sleep in cool caves during the day. North Australian gowarrang have little or no hair compared with those from cold southern Australia. They make good tucker.

Size: 30 to 45cm



Malambibbi (G,K) Buridj (J) Nabarraminmin (I)

Arnhem leaf-nosed bat

Hipposideros inornatus

Some small malambibbi pick up fire and take it to caves for the spirit Namorodol.



Photo Ian Morris

Arnhem leaf-nosed bats roost in caves or abandoned mine shafts, in cool drafty areas and close to water. They hunt for flying insects like beetles and moths near creeks and in open woodland. They are quite large for an insectivorous bat, with a pale brown body and a slightly paler belly. They have large, pointy ears and a very well developed nose-leaf.

These malambibbi have only been recorded in a few places in western Arnhem Land stone country and one place in Litchfield National Park.

Size: 7cm



V

NT



Northern leaf-nosed bat

Hipposideros stenotis



Photo Anne O'Dea

V

NT



Northern leaf-nosed bats forage for insects in open forest, open woodland, flood plains and spinifex hills, usually close to stone country. They have long fur that is a grey-brown colour and lighter on the belly. They roost in sandstone caves, boulder piles, and disused mines and are rarely seen.

This photo was taken at Bowali. It looks like this kind of malambibbi but it was far from stone country.

Size: 4 to 5cm

Ghost bat

Macroderma gigas



Photos Anne O'Dea



Walarrk are the largest Australian microbats and can easily be heard when they call. They eat large insects, geckos, frogs and small mammals and birds which they catch in flight and take to a perch to eat. Bits and pieces of their kill can often be seen below where they ate.

In Queensland their numbers have gone down. Research in Kakadu will show if the same thing has happened here, but there are still many heard hunting at some times of year.

Size: 10 to 12cm



Little red flying fox

Pteroptus scapulatus



Photo Ian Morris

Nagayalak have red-brown body fur and a grey head. The more common black flying fox are black with a red neck. Nagayalak wings are quite see through. They eat fruits and nectar.

Size: 12 to 20cm

Malambibbi (G,K) Buridj (J) Nabarraminmin (I)

Bare-rumped sheathtail bat

Saccolaimus saccolaimus nudicluniatu



Photo © Australian Museum



These fast flying malambibbi are red-brown with white spots. They hunt insects high above the ground and sleep in tree hollows. Very few have been recorded, but they may be widespread across the Top End and Queensland. They also live in south-eastern Asia and the Solomon Islands.

The only NT records are from Kapalga and Humpty Doo.

Size: 8 to 10cm



Indo-Pacific humpback dolphin

Sousa chinensis



Photo Carol Palmer



These dolphins have a blunt dorsal fin and often have pink coloured patches – especially as they get older.

In Kakadu, Indo-Pacific humpback dolphin numbers seem stable. They have been seen up to 30 km upstream of the East Alligator River mouth. These coastal dolphins had not been recorded this far upstream before in Australia.

Size: up to 2.6m

Snubfin dolphin

Orcaella heinsohni



Photo Carol Palmer



These dolphins have a bulbous head, no beak and a small dorsal fin.

In Kakadu, snubfin dolphin numbers are stable and they have been seen up to 50 km upstream of the South Alligator River mouth. Coastal dolphins had not been recorded this far upstream before in Australia.

Size: up to 2.7m



Dugong

Dugong dugon



Photo © Commonwealth of Australia (GBRMPA)

Photo Ian Morris

Dugong spend most of their time eating seagrass in calm, sheltered, shallow sea. They sometimes swim in large herds.

Not much is known about dugong in and around Kakadu.

Size: up to 3m



Birds

Gorrbelah (G) Doddorok (K)

Chestnut-quilled rock-pigeon

Petrophassa rufipennis



Photo Anne O'Dea

N

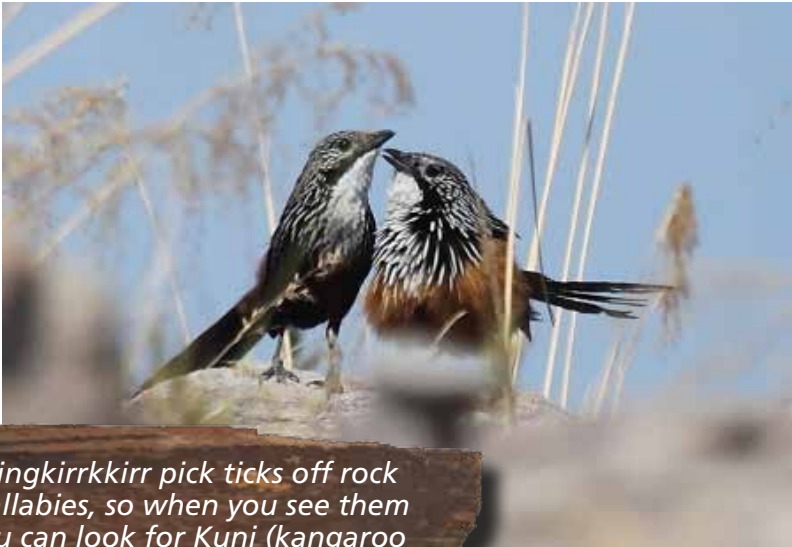


Gorrbelah are squat, rock pigeons with bright chestnut patches on the outer wing that flash as they fly noisily from rock to rock. They can be alone, in pairs or in groups of 20 or more. They feed on seeds in rocky escarpment – mostly early and late in the day. Their nests are quite large and saucer-shaped, built with sticks and usually lined with fine spinifex grass, in rock country. When gorrbelah fly their wings make a whirring noise.

Size: 31cm

White-throated grasswren

Amytornis woodwardi



Yilingkirkkurr pick ticks off rock wallabies, so when you see them you can look for Kunj (kangaroo meat).

Photo Marc Gardner

Yilingkirkkurr scurry and hop around, calling in their territory in rocky spinifex country. They eat invertebrates, seeds and other plant material. They are often in a family group but can be alone or in a pair. Yilingkirkkurr breed in Gudjeuk and Yekke. Cool Yekke fires should help protect their habitat from hot, late season fires that would burn their food and nesting places.

Surveys in 2011 and 2014 showed that there are still grasswrens in a wide area of Kakadu, and that they can be in burnt areas. Kakadu includes about one quarter of their range.

Size: 20 to 22cm



V

EPBC



Worrbekworrbek(G)

Rainbow pitta

Pitta iris



N



Photo Anne O'Dea

Worrbekworrbek live in rainforests along creeks and in bamboo. Females are slightly smaller than males. They eat insects and snails they find in leaf litter. They build nests with a wide-side entrance of dead leaves loosely put together.

Size: 16 to 19cm

Mowirn (G) Ngalmirlamirla (K,J)

Peregrine falcon

Falco peregrinus



Photo Ian Morris

Female mowirn are much larger than males. These mowirn can fly much faster than similar sized birds they eat like pigeons, doves, waterbirds, owls, songbirds, and waders. They hunt at dawn and dusk when prey is most active. They hunt by diving from above. Each mating pair usually returns to the same nesting spot each year.

Size: 35 to 50cm



N



Mibbarr (G) Jirniyn (J)

Black-breasted buzzard

Hamirostra melanosternon



Photos Ian Morris

N



Black-breasted buzzards are large birds of prey but smaller than wedge-tailed eagles. Females are larger than males. They have large white patches under the wings visible when they soar overhead. They eat mammals, lizards and other birds. They also raid eggs from ground-nesting birds, breaking large eggs by hitting stones against them. They often nest along waterways.

Size: 55cm

Emu

Dromaius novaehollandiae



Photo Ian Morris

Ngurrurdu are found across Australia but are scarce in the Top End. They eat seeds, fruit, insects, and growing tips of plants. Ngurrurdu use their strong, clawed feet to defend themselves. They have good eyesight and hearing. The shaggy feathers give them good camouflage and keep them cool in the hot sun. They live in loose groups and males look after the eggs and chicks. Late, hot fires destroy their eggs and burn their food – especially fruit.

In Kakadu they are most often seen near the western boundary.

Size: 1.5 to 2 metres



Ragul (G) Rakul (K) Lumpuk (J)

Partridge pigeon

Geophaps smithii smithii



Photo Anne O'Dea

V

EPBC & NT



Ragul shelter and eat seeds in clear or burnt patches of grass. They build nests on the ground in unburnt areas – usually in Yekke, so early, cool, patchy fires help protect them.

Ragul were once widespread across the Top End, Kimberley and the Tiwi Islands, but numbers are going down fast. Kakadu is a major stronghold. They are often seen at Bowali Visitor Centre.

Size: 25 to 30cm

Australian owlet-nightjar

Aegotheles cristatus



Photo Anne O'Dea



Nadjik roost by day in hollow branches lined with green leaves, often near the ground. Their churring call is a common night sound as they fly fast hunting insects.

Size: 21 to 25cm



Spotted nightjar

Eurostopodus argus



N



If young girls see lablab they hold their breath as they go past or they get bigger breasts.

Photo Micha Jackson



At dusk and dawn, lablab sit on the ground or open branches. They hunt insects in flight, announcing they're presence by calling their name repeatedly. Lablab roost and nest on the ground, often in the shade of larger trees or low hanging branches. Their colours are very well camouflaged with leaf litter.

Unfortunately lablab are most often seen by most people bouncing off the car's bullbar.

Size: 29 to 32cm

Djikkilirri (G) Jikkilirrij (J)

Hooded parrot

Psephotus dissimilis



Photos Alys Stevens



Djikkilirri are usually seen in pairs or small groups especially in the morning. They eat grass seeds on the ground and build nests in termite mounds.

They only live in parts of the Top End including the southern area of Kakadu.

Size: 25 to 26cm



Gouldian finch

Erythrura gouldiae



Photo Ian Morris

E/V

EPBC/NT



Dalkgedalkgen have a black or red face – usually black. They eat grass seeds and nest in salmon gum tree hollows which they line with soft, dry grass. Dalkgedalkgen travel in small flocks in the breeding season and larger flocks in non-breeding season and are never far from water. Flocks once had up to thousands of birds. There may now only be around 2500 adults left, and this might be to do with a mite making them sick. However, they seem to be increasing again slowly.

Size: 12 to 14cm

Marnimbulbara (G)

Crested shrike-tit (northern)

Falcunculus frontatus whitei



Photo Micha Jackson

Photo Marc Gardner



Marnimbulbara have a dull green back and wings, yellow belly and a crested black and white head. Not much is known about these birds, but they probably act like other shrike-tits which quietly and slowly look for insects on leaves in tree tops, or use their strong beaks to search under bark. Most records of shrike tits are from woodlands in lower rainfall areas than Kakadu, especially around Katherine-Larrimah. They are not often seen.

Size: 15 to 19cm



Masked owl (northern)

Tyto novaehollandiae kimberli

Barn owl Yerini (K)



Photo Ian Morris



Photo Deane Lewis

Barn owl has a dreaming site at Indjuwandjuwa.



Masked owls look similar to barn owls (inset) but are much louder and larger (especially their feet). They also have colour around their eyes and tend to hunch over more when they perch. They hunt mainly for mulbbu (mice and rats) and other mammals up to the size of possums. They roost and nest in large tree hollows and are very territorial. They breed when conditions are favorable which can be any time of the year. Their nests are usually built with soil, mulch or sand.

Small mammal decline is likely to mean there is less food for these owls and other predators.

Size: 38 to 50cm

Grass owl

Tyto capensis



Photos Ian Morris

Grass owls look like white ghosts at night but their backs are golden brown. They hunt by flying slowly and quietly backwards and forwards over long grass listening for tell tale signs of mulbbu (mice and rats) – usually at night, but sometimes in the afternoon. They nest in the grass and make a flat area where they lay four to six eggs depending how many mulbbu are in the area.

Sometimes they are seen on the South Alligator floodplain.

Size: 33 to 36 cm



N



Red goshawk

Erythrotriorchis radiatus



These large, rare goshawks often perch high in trees from where they hunt other birds, including ducks and cockatoos. They build large nests along rivers and creeks (often in a tree fork) at least 10 metres above ground. They are larger and much redder than brown goshawks and have longer wings and a shorter tail. Younger birds are more red than adults.

Size: 45 to 60cm

Grey falcon

Falco hypoleucos



Photos © Mat & Cathy Gilfedder

Grey falcons are rare and hard to see. Other birds of prey are sometimes recorded as grey goshawk. These mowirn hunt other birds, mammals, reptiles and insects.

There are very few confirmed records from Kakadu.

Size: 30 to 45cm



Benuk (G) Benok (K) Penuk (J) Wanjarrk (I)
Dumugarnyi (L)

Australian bustard

Ardeotis australis



N



Benuk Kadjang is a dreaming site on the East Alligator River called Turkey Dreaming in English.

Photo Ian Morris

Benuk, also called plains turkey, are found in most open habitats. They eat seeds, fruit, centipedes, insects, molluscs, lizards, young birds and mulbbu (mice and rats). Males are larger than females and have a large sack on the throat which they fill with air when they court females. Eggs are laid on the ground and looked after by the females. Benuk are good bush tucker.

Size: 80cm to 1.3m

Yellow chat (Alligator River)

Epthianura crocea tunneyi



Photo Martin Armstrong

Yellow chats can be in groups of up to 10 but they are rarely seen. They eat invertebrates and build cup-shape nests with plant stalks and grasses.

Kakadu probably has about half of the total range of the rarely seen yellow chats. Mimosas control is very important for their survival.

A survey in 2014 showed that there are still yellow chats in the Kapalga area of Kakadu.

Size: 10 to 12cm



E

EPBC & NT



Threatened shorebirds



Eastern curlew Kalarwirdwird (K)
Numenius madagascariensis
Size: 60 to 66cm



Asian Dowitcher
Limnodromus semipalmatus
Size: 33 to 36cm



Great knot
Calidris tenuirostris
Size: 26 to 286cm



Red knot
Calidris canutus
Size: 23 to 25cm



Bar-tailed godwit
Limosa lapponica
Size: 37 to 39cm



Lesser sand-plover (Mongolian)
Charadrius mongolus
Size: 18 to 21cm



Greater sand-plover
Charadrius leschenaultii leschenaultii
Size: 22 to 25cm



Curlew sandpiper
Calidris ferruginea
Size: 18 to 23cm



Australian painted snipe female & male
Rostratula australis
24 to 30cm

Illustrations Ivell Whyte

Shorebird species vary in size from as tiny as brrit brrit (bee-eater) to quite large. Their beaks are different shapes to find their favoured invertebrates like shellfish, worms and crabs. Many of them fly up to 12,000km between countries every year, facing threats as they go. All shorebirds above are listed as vulnerable in the NT. The painted snipe is also listed as endangered under the EPBC act.

Several shorebirds feed on the well protected coast of Kakadu's mainland and Field and Barren islands. Curlew sandpipers also visit floodplain country. The only record of a painted snipe in Kakadu was near Cooina, which is its favoured habitat.



Reptiles

Nawaran (G,K,J,I)

Oenpelli python

Morelia oenpelliensis

V

NT



Photo Anne O'Dea

Nawaran has his own language like a human. If you hunt nawaran don't utter his name or he will hear you and hide inside a cave.

Nawaran are rarely seen and not much is known about them. Adults are large enough to eat wallabies and possums. Sometimes they travel to trees following the smell of gulaban (fruit bats) which they also eat.

Nawaran live over a very large area in Kakadu and Arnhem Land, but most of it is probably not suitable for this naturally rare snake. Kakadu probably has about one quarter of the total population.

Size: up to 4.5m



Ngunngudngorrmanj(G) Manjdjurdurk (K) Kurlk (J)
Ngawundjan (I) Lumuwat dumuligan (L)

Olive python

Liasis olivaceus



Photo Anne O'Dea

Photo Ian Morris

Ngunngudngorrmanj eat reptiles, frogs, birds and mammals up to the size of rock wallabies – mainly at night. Because they are large and “brown” people sometimes mistake them for king brown snakes but they look very different and have much smaller scales.

Olive pythons are so long that they stretch across the road. Drive slower at night to avoid running over them.

Size: up to 4.5m



N



Dadbe (G,K) Jarlung(J) Ilewarrba (I) Wuruwurru (I)
Alinyman dinyayan (L)

King brown snake

Pseudechis australis



Dadbe was promised borlokko (water python) as a wife but she didn't like him. He was confused and hid in a tree. His mother and borlokko found him but he bit them and killed them. Stay away from dadbe.

Photos Ian Morris



Dadbe are the most venomous snakes in the Kakadu region and should be left alone. They live in most habitats. One good way to recognise dadbe is by their large scales. Dadbe eat mammals, frogs, birds and reptiles – including other snakes.

Numbers have greatly decreased in areas with cane toads, including Kakadu, but in late Wurrngeng 2013 quite a few dadbe were seen in Kakadu, including very large, old ones.

Size: up to 2.5m

Northern and Plains death adder

Acanthophis praelongus and hawkeii



Photo Anne O'Dea



N

Northern

V

EPBC Plains



Bek are small but very poisonous. They can be difficult to see when they lie in leaf litter and use their worm-like tail tip to lure small mammals, frogs, reptiles and birds close enough to eat. Northern and plains bek are difficult to tell apart, but plains bek can be bigger and are only found in cracking clay areas of floodplains. Northern death adders are not listed as a threatened species.

Bek numbers have gone down since cane toads arrived.

Size: Northern up to 70cm; Plains up to 1.2m



Water python

Liasis macklatti



N



Photo Anne O'Dea

Most borlokko are quiet, but they are cheeky if the spirit Nabang is their father.



Borlokko are shiny pythons with a yellow belly. They live near fresh water swamps and creeks and shelter in animal burrows or hollow logs. They hunt on floodplains for small mammals like dusky rats and can spend a long time in water looking for waterbirds eggs or goslings in Gudjeuk. Borlokko can survive hard times with relatively little food.

Size: up to 3m



Ngalkadjba? (K)

Arnhem Land skink

Bellatorius obiri



Photo Ian Morris



E

EPBC & NT

Not much is known about these large, chunky skinks. They are only found in western Arnhem Land stone country, where gurrih (blue tongue lizards) are the only skinks bigger than them. It is rare to see these skinks which prefer stone country with deep crevices like Nawurlandja, so it is difficult to know if their numbers are going down.



Kakadu is the only national park where they live and includes about one quarter of the range and population.

Size: 21cm (snout to vent)



Belerrk (G,K,J)

Northern giant cave gecko

Pseudotoledactylus lindneri



N



Photo Anne O'Dea



These belerrk live in sandstone caves where their colours blend in with sandstone. They hunt for small insects at night, especially warm drizzly nights. They become adults when they are two years old and can live for 20 years.

Giant cave geckos are only found in west Arnhem Land.

Size: 10cm (snout to vent)



Boiwek (G) Boywek (K) Poywek (J)

Northern knob-tailed gecko

Nephrurus sheai



Boiwek has a Mirarr men's dreaming story near Djabilukgu billabong. If a woman looks around there he'll smell her and run after her to her house.

Photo Anne O'Dea



Boiwek are sandstone country geckos where they are well camouflaged. They hunt at night, walking in a jerky motion hunting insects and spiders. In the daytime they shelter in a burrow or under rocks and scrub.

Size: 12cm (snout to vent)



Gundamen (G) Nalangak (K) Pemang (J)
Kundaman (I) Lam (L)

Frilled-neck lizard

Chlamydosaurus kingii



N



Dadbe (king brown snake) punished gundamen with skinny legs and a funny skin flap for breaking ceremony law. Gundamen ran and hid from dadbe behind a tree trunk.

Photos Anne O'Dea

Gundamen sleep in trees and eat invertebrates and small reptiles. They can make a big show of their frill when threatened or during social displays, but they are more likely to run for the nearest tree and hide behind the trunk.

Gundamen are mostly seen in Gurrung, Gudjeuk and Gunumeleng.

Size: 70 to 90cm

Gurrih (G) Kurri or Milhdarl (K) Morlel (J)
Wungkijbungkij (I) Mimiluk minyayan (L)

Northern blue-tongued lizard

Tiliqua scincoides intermedia



*Gurrih dreaming is at
Koongarra Saddle where
he is painted on the rocks.*

Photo Anne O'Dea

Gurrih are the largest blue-tongued lizards and can live up to 20 years. They shelter under fallen trees, in hollows and in animal burrows and eat snails, dead animals, flowers, fruits and fungi.

Unfortunately gurrih also eat toads so numbers have been going down since cane toads arrived.

Size: up to 56cm



N



Belerrk (G,K,J)

Yellow-snouted gecko

Lucasium occultum



Photos Anne O'Dea

E/V

EPBC/NT



Very little is known about these small dark brown belerrk. They have a reddish head, four large, squarish pale brown blotches along the back, and whitish spots scattered on the side and legs. They live on the ground where they shelter by day in leaf litter or shallow burrows. They eat invertebrates in leaf litter where they are well camouflaged.

These belerrk live only in pockets of the Mary River and Wildman catchments (including Mt Bundy military training area, Annaburroo pastoral station and Wildman reserve) and in a small area of Kapalga in Kakadu. A survey in 2013 confirmed they still live in the Kapalga area, but they have always been in very small numbers.

Size: 4cm (snout to vent)

Alwalngurru (G) Ngalbangurru (K) Ngalwalngurru (J)

Chameleon dragon

Chelosania brunnea



Photos Ian Morris

N



Alwalngurru live in trees and can have all sorts of colours from reddish brown to pale grey or yellowish. They have a brown line from the neck down the sides and sometimes have dark brown spots and patches. Their tails are long with a blunt tip and broad, dark brown and lighter bands. They also have a distinctive flap of skin under the jaw.

Alwalngurru are hardly ever seen, but are mostly seen in Yekke and Wurrngeng.

Size: 12cm (snout to vent)



Floodplain monitor

Varanus panoptes



V

NT



Photo Anne O'Dea



Galawan eat large insects, frogs, fish and small mammals as well as eggs of freshwater and marine turtles. They also scavenge for dead animals to eat including roadkill - which can end badly. They lay eggs in Gudjeuk. Galawan and their eggs are good bush tucker but, like some other goannas, very few are seen since cane toads arrived.

Small mammals, reptiles and invertebrates dive down galawan burrows to hide from flames of hot fires.

Size: up to 1.4m



Burarr (G,K) Dedjronj (K) Jujja (J) Yudi (I)

Mertens water monitor

Varanus mertensi



Photo Anne O'Dea



V

NT



Burarr are fairly small, dark monitors with many small yellow spots. They are usually near water, where they often sunbake on rocks or logs. Burarr are strong swimmers and can stay underwater for a long time. They hunt on land and in the water mainly for fish and frogs. They have a good sense of smell and may dig up prey – including fresh water turtle eggs. Their tail is one and a half times the body length.

Although these goannas are right across the Top End, the large areas of water in Kakadu are very important, with perhaps greater chance of surviving cane toads. A good place to see them is Gubara.

Size: up to 1m



Djerli (G,K) Jujja (J)

Mitchell's water monitor

Varanus mitchelli**V**

NT



Photo Anne O'Dea

Djerli are good swimmers and hunt in fresh water, mostly for fish, frogs and invertebrates. In Yekke, they dig a nest and lay about 10 eggs. Their long tail is two times the body length.

Djerli numbers went down when cane toads arrived in Kakadu and the Top End.

Size: up to 70cm



Binirring (G) Karrangburlurhme (K)

Mangrove monitor

Varanus indicus



Photo Ian Morris

Binirring are black with yellow spots and eat reptiles, birds, mulbbu (rodents) and crabs. The Kunwinjku name (Gombulumenj) describes the swelling neck.

Binirring tracks have a straight tail mark between the footmarks which can be seen leading to and from the mangroves on Field Island.

Size: up to 1.2m



Gumogen (G) Kumoken or Modjarrkki (K) Koymarr (J)
Iyarliyarl (I) Linan dirrinyan (L)

Freshwater crocodile

Crocodylus johnstoni



Photo Anne O'Dea



Gumogen are only found in Australia, where they live in freshwater rivers, creeks, billabongs and plunge pools. They are usually shy but can be aggressive if annoyed – especially during nesting season in Wurrngeng and Gunumeleng. Gumogen lay eggs in warm sand, and may live for over 50 years. They eat small animals including fish, insects, frogs, lizards, snakes, bats and birds. Males are larger than females.

In Kakadu gumogen live in upstream rivers and creeks and plunge pools like Maguk and Gunlom.

Size: 2 to 3m



Flatback turtle

Natator depressus



Photo Anne O’Dea

Yurrwa eat soft coral, jellyfish and other animals with soft bodies such as sea cucumbers and can stay longer underwater than most other sea turtles. Pigs could dig up the eggs on mainland beaches, but there are no pigs on Field Island. They are special to Australia because they nest only in north Australia.

In Kakadu, yurrwa nest on Field Island and a few beaches near West Alligator Head. Turtles nesting on Field Island have been monitored for over 20 years. The National recovery plan for marine turtles (Environment Australia 2003) listed Field Island as one of Australia’s 12 key monitoring sites for flatback turtles. In 2014 satellite tags were attached to two yurrwa to map where they go.

Size: carapace (shell) up to 1m



Manbiri (G,K,I)

Green turtle

Chelonia mydas


A bark painting of a sea turtle collected from Field Island in 1884



Almangiya (long-necked turtle) gave his fat to his brother manbiri and sent him to live in the sea. Then almangiya was small enough to live and hide on the floodplains.

Photos Anne O'Dea

V

EPBC



Manbiri spend most of their time in shallow, coastal waters with lush seagrass beds. Green turtles migrate long distances between feeding sites.

Manbiri are usually seen swimming around the Kakadu coastline. They are the most popular marine turtle that bininj eat.

Size: carapace (shell) up to 1.5m

Manbiri (G) Majindi (I)

Hawksbill turtle

Eretmochelys imbricata



Photos Ian Morris



V

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Majindi have a beak like a parrot which is used to eat sponges, soft corals, seagrass and shellfish. Their shells are very beautiful and can be made into decorative pieces so majindi have been killed for many years and are now low in numbers in the Pacific.

Majindi don't nest in Kakadu, but they do feed in the area.

Size: carapace (shell) up to 114cm



Loggerhead turtle

Caretta caretta



Photos Anne O'Dea



Marrumbina use the strong jaws in their huge heads to eat jellyfish, fish and seaweed as well as hard-shelled animals like shellfish and crabs.

There are very few reliable sightings of loggerheads in Kakadu where the water is not deep enough for their lifestyle.

Size: carapace (shell) up to 90cm



Olive ridley turtle

Lepidochelys olivacea



Photo Australian Turtle Inc.

Olive ridley turtles are the smallest sea turtles. They have paddle-like flippers. They eat jellyfish, sea sponges, sea urchins, shrimp, crabs and rock lobsters. They were probably once the most abundant sea turtle in the world but globally they have declined by more than 30 per cent.

There are few remaining nesting sites in the world and there is one unconfirmed record of a nest in Kakadu.

Size: carapace (shell) up to 70cm





Fish

Largetooth sawfish

Pristis pristis



Photo Anne O'Dea



Inset photos Peter Kyne



These sawfish used to be called freshwater sawfish. Their saw (rostrum) has 17 to 23 teeth evenly-spaced along the whole length. The front of the dorsal (back) fin is in front of the pectoral (side) fins. The saw is used to dig for buried crustaceans, slash at prey and defend against dangers like sharks. Largetooth sawfish can be caught accidentally but must be released. Young sawfish migrate upstream in Gudjeuk where they stay for four years then move to the sea.

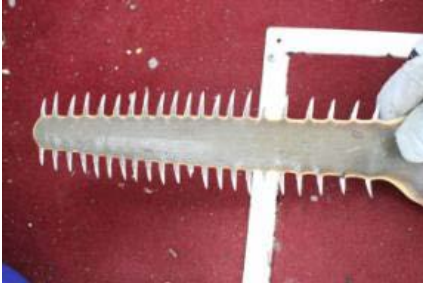
It is important that Kakadu sawfish are protected from commercial fishing. Some traditional owners are worried that numbers are going down. Researchers are trying to find out more about them.

Size: up to 7 m



Dwarf sawfish

Dwarf sawfish



Photos Peter Kyne



Dwarf sawfish are only found in coastal and estuarine areas, like East Alligator River up to Cahills Crossing. They have a saw (rostrum) with 18 to 22 evenly spaced teeth. They slash the saw from side-to-side to find invertebrates in the mud and to stun fish. They probably also eat crabs and shrimps.

These sawfish are extinct outside Australia so it is very important to protect them in Kakadu. Researchers are trying to find out more about them.

Size: up to 3.2m



Northern river shark

Glyphis garricki



Photos Peter Kyne

E

EPBC&NT



These wamba live in coastal water and muddy, tidal rivers with large tides in northern Australia. Like other river sharks they have a stocky grey body, tiny eyes and broad fins. They have a larger second dorsal fin than bullsharks and a longer snout and more grey under the eye than speartooth sharks. They are very rare and facing threats from commercial and recreational fishing, and maybe habitat loss.

Kakadu research is showing how and where they live, and that the Alligator and Wildman rivers are very important to the survival of these sharks. In fact half of the entire population live in Kakadu.

Size: male up to 1.5m, female up to 3m

Spear-tooth shark

Glyphis glyphis



Bullshark



Photos Peter Kyne



Spear-tooth sharks also look like bullsharks and are only found in fast-moving fresh or salty, muddy water. They have a larger second dorsal fin than bullsharks and a shorter snout and less grey under the eye than northern river sharks. They feed on bony fish and crustaceans which they hunt in murky water.

Recent research has shown that the Alligator rivers are a stronghold for these wamba, although there are less of these than northern river sharks.

Size: up to 2 to 3m (or more)



Fish

There are more than 300 species of fish in Kakadu. We know little about many of the fish or their threats. These are just a few of the important fish in Kakadu.

N

Burd (G) Midgleys grunters

Pingalla midgleyi live only in the Alligator and Katherine rivers. They eat algae, detritus and insect larvae. They have a black blotch on the anal fin.



Photo Laurenç Marsol

Size: up to 14cm (usually 8cm)



Dilebang (G) Darake (K) Werej (J)

Regal rainbow fish *Melanotaenia trifasciata* are beautiful rainbow fish that live in north QLD and the Top End including Mary River in Kakadu. They have different colours in each river.



Photo David Wilson

Size: up to 15cm (usually less than 12cm)



Djagolk (G) Komboh (K) Northern purple-spotted gudgeon *Mogurnda adpersa*, are fairly widespread. A southern sub-species is threatened in the Murray Darling Basin. They eat insects, small crustaceans and some fish. Males look after the eggs.



Photo David Wilson

They can leap from rock ledge to rock ledge to move upstream.

Size: up to 20cm, usually 5 to 10cm

Barraway's gudgeon *Hypseleotris barrawayi* are rare native freshwater fish recently named after Sandy Barraway, a traditional owner of the Sleisbeck country where they live.



Photo David Wilson

Size: up to 10cm

Threadfin goby *Egglestonichtys ulbubunitj* were named in 2013 after the Ulbu Bunitj clan whose country includes where they live.

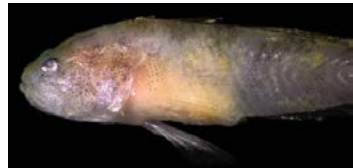


Photo Charles Darwin University

Size: 3cm





Insects

Alyurr (G) Ngalyurr (K)

Leichhardt's grasshopper

Petasida ephippigera



Adult



Nymph

Alyurr are children of the powerful Lightning Man Namarrgon. Adults appear before Gunumeleng storms.

Photos Anne O'Dea

Alyurr nymphs have no wings when they emerge from the ground in Yekke so they can't fly away from fires. They do not grow wings until Gunumeleng. They live in colonies and only eat *Pityrodia* plants like *Anmanglarboh* (*Pityrodia jamesii*). Alyurr live in Arnhem Land stone country and a few other places. They are one of many grasshoppers only found in the region.

Alyurr's stone country home areas should not be burnt too often, but some small, cool and patchy Gudjeuk or Banggerreng fire is good for at least one kind of *pityrodia*.

Size: males up to 4cm, females up to 6cm



Plants

Graveside Gorge wattle

Acacia equisitifolia



Photos Kym Brennan

Graveside Gorge acacia grow in a very small area of Graveside Gorge. Very little is known about the plant, but numbers go down quickly with fire and won't recover if there are too many fires or very hot stone country fires. We need to know more about the shrub to protect it properly.

Kakadu is working with the Australian National Botanic Gardens to collect seeds of these and some other rare species to be kept in a seed bank for safekeeping.

Size: up to 1m, pods 10 to 30mm



Brennan's hibiscus

Hibiscus brennanii



Photo Kym Brennan

These hibiscus have soft, hairy leaves. The only areas they have been recorded are near Baroalba Creek and on Mt Brockman in Kakadu. There is a naturally very small total population of less than 500 adult plants. Good fire management will help protect these plants.

Size: up to 3m



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EPBC & NT



Jacksonia divisa

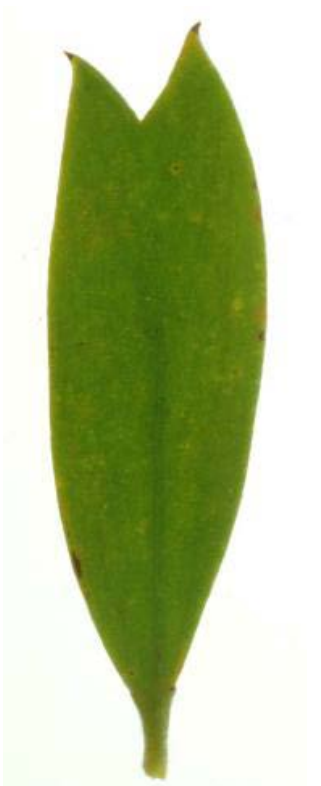


Photo Kym Brennan



Photo Ian Cowie; Copyright: NT Herbarium, DLRM

Jacksonia divisa shrubs have yellow flowers and only grow around the edge of the Marrawal Plateau in Kakadu where fire is the biggest threat. They may be decreasing but not enough is known about them to be sure.

Size: up to 3m, pods 9mm



Pink myrtle

Lithomyrtus linariifolius



Photo Kym Brennan



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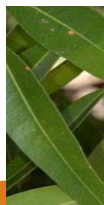
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Pink myrtle spread across rocks near anbinik forest and spinifex where there is little or no fire. They depend on healthy sandstone heath which is a threatened ecological community.

Most of these plants grow in Kakadu, but they are also in Nitmiluk and Arnhem Land.

Size: up to 20cm, flowers 1cm



Sauropus

Sauropus filicinus



Photo Kym Brennan

These small, fern-like plants have a thick woody base and grow from crevices in sandstone cliff faces. They have been recorded in only seven places on Mt Brockman and northern outliers in Kakadu, and one place in Arnhem Land where they are fairly protected from fire.



Hibbertia pancerea



Photo Kym Brennan

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NT



There are very few of these shrubs which grow on cliff faces near Lightning Dreaming close to anbinik forest where they are fairly safe from fire. Many hibbertias species look very similar to each other and are hard to tell apart.

Size: up to 1.5m, flowers 30mm



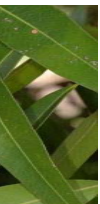
Hibbertia tricornis



Photo Kym Brennan

Hibbertia tricornis has only been collected once from Mt Brockman. They are very similar to other hibbertias in the area, including *H. brennanii*, but very little is known about them. Good fire management is important for these plants.

Size: up to 20cm, leaves up to 15mm, flowers 16mm



Hibbertia brennanii



Photo Raelee Kerrigan; Copyright: NT Herbarium, DLRM

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Hibbertia brennanii have wiry branches and grow in a small area on a rock outlier on the Arnhem Land border. They grow in rock crevices where they are fairly protected from fire, but good fire management in the sandstone heath areas will help protect them. They are very similar to other hibbertias in the area, including *H. tricornis*.

Size: up to 30cm, flowers 8mm, leaves 3 to 9mm



Hibbertia sp. South Magela



Photos Ian Cowie; Copyright: NT Herbarium, DLRM

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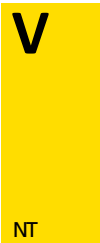
This hibbertia is a cousin of *Hibbertia pancerea* but has much smaller leaves. It grows deep in South Magela Gorge where it is fairly protected from fire. It does not have an official species name yet.

Size: stems up to 50cm, leaves 15mm

Bolbitis quoyana



Photo Kym Brennan



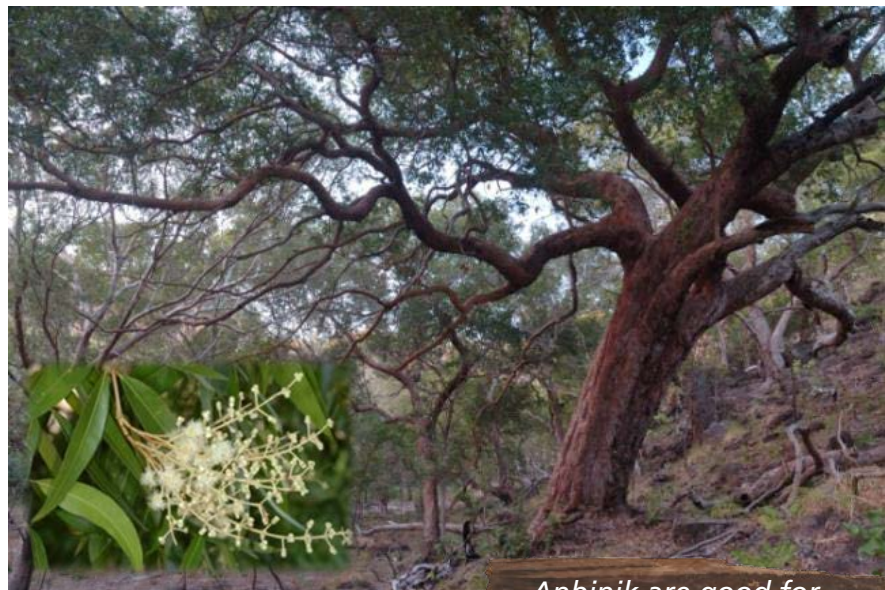
This fern is fairly common in an area of Cape York Queensland, but in the NT it is only known from Dinner Creek in Kakadu. Because they only grow in this small, wet gorge, they could all be washed away by floods. For plants like this that only grow in a small area, growing some as a conservation measure may be considered.

Size: up to 60cm



Anbinik

Allosyncarpia ternata



Photos Kym Brennan

Anbinik are good for shade, sugarbag and fighting sticks.

Tall anbinik trees dominate slopes of wet gorges in Kakadu and Arnhem Land, but do not grow naturally anywhere else. The best way to protect anbinik is to burn stone country around monsoon forest on foot.

The planted trees on the side of the road into Jabiru include anbinik.

Size: up to 30m



Cypress pine

Callitris intratropica



Photos Kym Brennan

These tall, straight trees grow in sandy soil in open forest and woodlands in sandstone or lowland country. Anlarrh need cool fires but cannot survive hot fires. They have been used for building and last a long time because the heartwood is termite resistant but they take a long time to grow back.

Size: up to 30m



Common snout orchid

Dienia montana



Photo Martin Armstrong; Copyright: NT Herbarium, DLRM

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Dienia montana has been renamed from *Malaxis latifolia*. These ground orchids have greenish-brown to purple flowers in Gunumeleng and Gudjeuk but the plants die off in Yekke. They grow around the edge of springs where they can easily be killed off by pigs. In the NT they have only been seen near Munmarlary, but they also grow in Queensland and some other countries.

Size: leaves up to 30 x 9cm, flower stem up to 30cm

Climbing pandan

Freycinetia excelsa



Photos Kym Brennan



These small, woody vines have red fruit in Gudjeuk. They grow on tree trunks in protected gorges in north Australia and New Guinea. In Kakadu they only grow at Dinner Creek.

Size: up to 8mm thick



Garrbarda (G) Karrbarda or Kayawal (K) Jampurl (J)
Lungun (I) Limbi (L)

Long yams

Dioscoria transversa



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When long yam is dug up for bush tucker, it is important to leave some in the ground for the next year.

Photos Anne O'Dea

Yams are very important bush tucker. Some need to be treated before you can eat them so they are not poisonous.

Andirngu (G) Mandirnku (K) Jaynma (I)

Armstrong's cycad

Cycas armstrongii



Andirngu is toxic unless treated by soaking for about a month (until smelly) before cooking it.

Photos Kym Brennan

Andirngu grows only in open grassy woodlands in the Northern Territory. In Kakadu they grow in a small area near Wildman River. Outside Kakadu and other conservation reserves, a lot of andirngu country is being cleared. Hot fires, especially where there are introduced grasses, kill many of these plants.

Size: up to 6m



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NT



Bladderwort

Utricularia dunstaniae



Photos Kym Brennan



This small carnivorous bladderwort grows in wet, sandy areas and flowers in Yekke. It is rarely seen, and like all bladderworts, traps tiny insects with a bladder-like trap. They are easily crushed where people walk and live, so Kakadu and Garig Gunak Barlu national parks are very important for their survival.

In Kakadu it has only been recorded near Jabiru.

Size: up to 15cm



Leaf pondweed

Monocharia hastata



Photo Kym Brennan

Photo Buck Salau

Leaf pondweed flower in Yekke and fruit in Wurrngeng. Kakadu is one of only two places in Australia where this plant is known to grow. In Asia it is quite common and is used for food. Some pondweed was collected in 2013 from Benbunga Swamp for CSIRO researchers to test if beetles can be used to control water hyacinth weed. Unfortunately the beetles ate the native hyacinth too so they won't be introduced to Australia to control the hyacinth weed.

Size: up to 1.5m, flowers 13 to 16mm



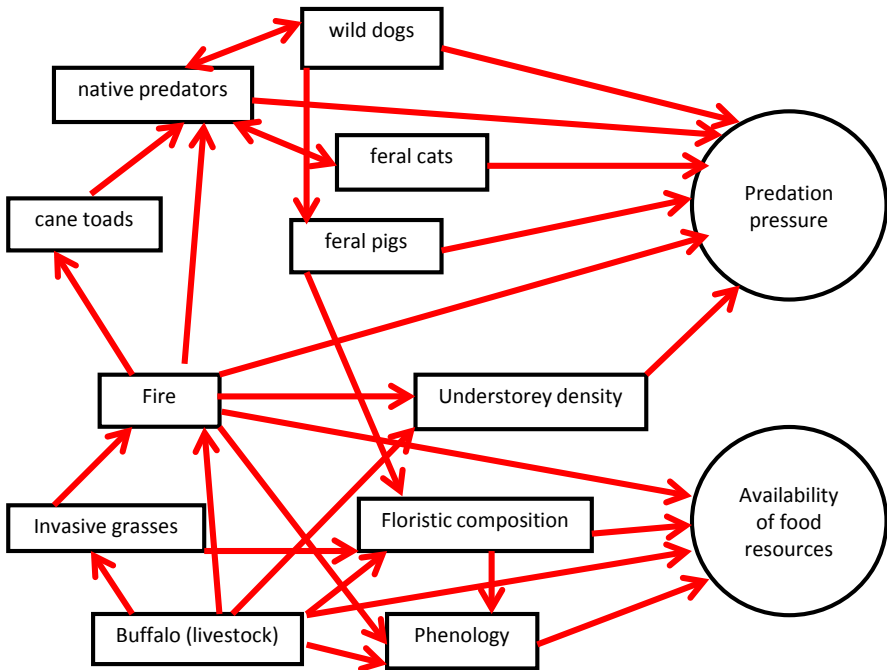
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The task ahead

Conservation is not necessarily straightforward. In many cases, threatened species are affected by many things that affect each other or which might operate indirectly and unexpectedly. So, management attention directed at just one threat may not be enough – or even do harm. For example the figure below shows a ‘schematic network diagram’ of the factors that may affect ragul (partridge pigeon), directly or indirectly.



A schematic network diagram of the factors that may affect the conservation status of partridge pigeon, operating principally through impacts on food availability and predation. (Woinarski 2014)

Acknowledgements

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<http://www.nt.gov.au>



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