

Addressing our mammal extinction crisis

Northern Australia Mammal Protection Plan



In the International Year of Biodiversity, it is shameful to note that Australia has the worst mammal extinction record in the world. In the last 200 years 22 mammals have become extinct¹. Scientists have warned Australia is on the cusp of another wave of mammal extinctions across its tropical savannah areas.

Over the last 10-20 years, the diversity and abundance of North Australia's small mammals has decreased dramatically from Cape York to the Kimberley. The government response has been too slow to prevent this decline.

At least seven species are now at high risk of extinction, including the Northern Quoll, Golden Bandicoot and Bilby, and the habitat and density of another 14 species has been substantially reduced (see Appendix). Scientists believe there may be many other species at risk, but there is insufficient data to confirm this.

The mostly likely cause of the extinction crisis includes:

- Altered fire regimes (especially an increase in extensive and intense late-dry season fires)
- Grazing by feral herbivores (especially feral cattle, buffalo, donkeys and horses)
- Predation by feral cats

It is not clear how these primary causes interact or what role secondary factors such as weeds, disease or cane toads may also play.

New research is urgently needed to determine the cause of the crisis, and to develop and implement conservation management practices to reverse the decline. Indigenous land management including enhanced Indigenous ranger programs are likely to play a key role in delivering an effective solution.

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The science

Numerous scientific reports have found that small to medium-sized mammals have vanished from vast areas of the north, including some of Australia's most famous national parks such as Kakaduⁱⁱ.

Scientists advise that species' distributions are retracting westwards and northwards. Golden-backed Tree-rats, for example, once extended from Broome in the west, through the Kimberley and across to the east side of the Top End. Now this rodent survives only in the northwest fringe of the Kimberley coast, a tiny fraction of its former rangeⁱⁱⁱ. Northern Quolls, Golden Bandicoots and Brush-tailed Rabbit-rats are now extinct or close to extinction from the mainland of the Northern Territory^{iv}.

The degree of uncertainty about the cause of this extinction crisis is best demonstrated by the results from a long-term monitoring program in the World Heritage-listed Kakadu National Park. Although it is the largest and most famous protected area in northern Australia, Kakadu's iconic status – and its relatively substantial conservation management budget – has failed to protect its native mammals. In the past 15 years, the abundance of small mammals in Kakadu has declined by 75 per cent, and the number of species recorded has declined by 66 per cent^v.

The lesson from the Kakadu National Park situation is that there is a critical need for an urgent and comprehensive re-evaluation of the approach to conservation in northern Australia. Despite an on-going annual investment of more than \$18 million, by the Commonwealth government, the natural capital of Kakadu is being severely diminished. The example of Kakadu demonstrates that a different approach to diversity protection is required.

The Greens proposal to address the crisis

The Greens will establish the Northern Australia Mammal Protection Program within the Department of Environment, Water, Heritage and the Arts. The Department will be responsible for the design, implementation and evaluation of the program, which will run for a period of five years. An expert advisory panel will be appointed to advise the Minister on the implementation of the program. The expert advisory panel will include scientists and land managers with practical experience in Northern Australia and relevant project management

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expertise. The program will have strong links with Indigenous ranger programs in both data collection and implementation of management strategies.

The Northern Australia Mammal Protection Program will have funding of \$130 million over five years to deliver the following objectives:

1) Conduct a research program to improve our understanding of the best approach to threat mitigation.

- The largest knowledge gaps relate to:
- the role of feral cats in causing the northern mammal declines
- the interaction of the key threats of mismanaged fire, introduced herbivores, and feral cats.
- *Estimated cost = \$12.5 million over 5 years.*

2) Secure the long-term protection of important refugial areas, via acquisition (public and private), covenanting, and incentive schemes.

- Refugial areas include mainland sites that retain high mammal richness and abundance, as well as islands that have been isolated from some of the threatening processes that affect the northern Australian mainland.
- Indigenous co-management is likely to play a crucial role and, where refugia are publicly acquired, - traditional owners must be consulted in the establishment of Indigenous Protected Areas as appropriate.
- Although some refugial areas are known, a systematic survey program is needed to identify other important areas.
- Estimated cost = \$50 million over 5 years.

3) Implement habitat improvement strategies

- appropriate management of fire, and the control of invasive species (both animals and plants).
- development of regional fire management plans; and delivery of prescribed burning by Indigenous rangers and landholders within the region.

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- regional feral animal control programs such as the successful donkey control program in the Kimberley.
- *Estimated cost = \$50 million over 5 years.*

4) Restore the ecological integrity of landscapes by reintroducing mammal species into areas from which they have disappeared, and in which threats are being adequately controlled.

- For example, species like the Golden Bandicoot and the Northern Quoll could be reintroduced into key areas from which they have disappeared.
- *Estimated cost = \$5 million over 5 years.*

5) Undertake an audit of the ecological health (especially in relation to mammals) of protected areas, including National Parks, private conservation land, and Indigenous Protected Areas, and implement a program of ongoing reporting on ecological health.

- To be effective, this would include the establishment of similar measurement systems on non-protected areas, such as pastoral land.
- *Estimated cost = \$12.5 million over 5 years.*

Benefits of the program

While this program would be primarily focussed on reversing the mammal extinction crisis, there would potentially be significant collateral benefits including:

- The conservation of a wide range of other plant and animal species
- Socio-economic benefits, particularly through employment opportunities for Indigenous communities.
- Greenhouse gas emission mitigation especially associated with a reduction in late dry season wildfires.
- The insurance value provided to the tourism industry.

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Appendix: Species at risk

Species with very high extinction risk:

- Northern Phascogale *Phascogale pirata*
- Golden Bandicoot *Isodon auratus*
- Golden-backed Tree-rat *Mesembriomys macrurus*
- Black-footed Tree-rat *Mesembriomys gouldi*
- Brush-tailed Rabbit-rat *Conilurus penicillatus*
- Spectacled Hare Wallaby *Lagorchestes conspicillatus*
- Carpentarian Rock-rat *Zyzomys palatilis*

Species that have experienced substantial range contractions and/or density reductions:

- Northern Quoll *Dasyurus hallucatus*
- Brush-tailed Phascogale *Phascogale tapoatafa*
- Fawn Antechinus *Antechinus bellus*
- Sandstone False Antechinus *Pseudantechinus bilarni*
- Carpentarian False Antechinus *Pseudantechinus mimulus*
- Butler's Dunnart *Sminthopsis butleri*
- Red-cheeked Dunnart *Sminthopsis virginiae*
- Northern Brown Bandicoot *Isodon macrourus*
- Common Brushtail Possum *Trichosurus vulpecula*
- Naberlek Petrogale *concinna*
- Antilopine Wallaroo *Macropus antilopinus*
- Pale Field Rat *Rattus tunneyi*
- Dusky Rat *Rattus colletti*
- Western Chestnut Mouse *Pseudomys nanus*

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Species that are of concern, but there is a lack of data on trends:

- Scaly-tailed Possum *Wyulda squamicaudata*
- Rock Ringtail Possum *Pseudocheirus dahli*
- Monjon Petrogale *burbidgei*
- Ningbing False Antechinus *Pseudantechinus ningbing*
- Chestnut Dunnart *Sminthopsis archeri*
- Kakadu Dunnart *Sminthopsis bindi*
- Northern Nailtail Wallaby *Onychogalea unguifera*
- Purple-necked Rock-wallaby *Petrogale purpureicollis*
- Tropical Short-tailed Mouse *Leggadina lakedownensis*
- Northern Hopping Mouse *Notomys aquilo*
- Central Pebble-mound Mouse *Pseudomys johnsoni*
- Water Mouse *Xeromys myoides*
- Arnhem Land Rock-rat *Zyzomys maini*
- Kimberley Rock-rat *Zyzomys woodwardi*

i Burbidge, A.A., McKenzie, N.L., Brennan, K.E.C., Woinarski, J.C.Z., Dickman, C.R., Baynes, A., Gordon, G., Menkhorst, P.W., and Robinson, A.C. (2009). Conservation status and biogeography of Australia's terrestrial mammals. *Australian Journal of Zoology* 56, 411–422.

ii Woinarski J.C.Z., Armstrong M., Brennan K.E.C., Fisher A., Griffiths A.D., Hill B., Milne D.J., Ward S., Watson M., Wunderlich S. & Young S. (2010). Monitoring indicates rapid and severe decline of native small mammals in Kakadu National Park, northern Australia. *Wild. Res.* 37, 116-126.

iii Palmer C., Taylor R. & Burbidge A.A. (2003) Recovery plan for the golden bandicoot *Isodon auratus* and golden-backed tree-rat *Mesembriomys macrurus* 2004-2009. Northern Territory Department of Infrastructure, Planning and Environment, Darwin.

iv Woinarski J.C.Z., Pavey C., Kerrigan R., Cowie I. & Ward S. (2007) *Lost From Our Landscape: threatened species of the Northern Territory*. Northern Territory Government, Darwin.

v Woinarski et al (2010). *ibid.*