

**A STRATEGY
FOR THE CONSERVATION OF THREATENED
SPECIES AND ECOLOGICAL COMMUNITIES
IN THE
NORTHERN TERRITORY
OF AUSTRALIA**

**PARKS AND WILDLIFE COMMISSION OF
THE NORTHERN TERRITORY**

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FOREWORD

The Northern Territory Government is resolved to undertake those measures within its power and capacity considered necessary for the future survival of species of plant and animal, and ecological communities threatened with extinction. Threatened species and communities remain a blot on our record of conservation in a relatively undisturbed environment. The Lesser Bilby, the Pig-footed Bandicoot, the Central Hare-wallaby, and the Crescent Nail-tailed Wallaby are some of the species that no longer exist. The Greater Bilby, the Mala, the Golden Bandicoot and the Night Parrot are among those that have declined to a point where their futures are threatened. This Strategy outlines the many things that can and will be done to minimise and, where possible, reverse these adverse trends.

Actions outlined in the Strategy meet commitments made by the Northern Territory Government in signing the National Strategy for the Conservation of Australia's Biological Diversity, and in agreeing to sign the draft National Strategy for the Conservation of Australian Species and Ecological Communities Threatened with Extinction. Australia has international obligations that stem from the Convention on International Trade in Endangered Species of Flora and Fauna, and the Convention on Biological Diversity. This strategy describes how Territorians will meet these obligations.

1. GOAL

The goal of the strategy is:

To enable those species and ecological communities threatened with extinction to survive and prosper in their natural habitats, and to minimise the chance of more species and communities becoming threatened.

2. GUIDING PRINCIPLES

The following principles will be used to guide the development, interpretation and implementation of this strategy.

1. An informed and involved public is the first step to the conservation of species and ecological communities threatened with extinction.
2. In the absence of accountability, an informed and involved public becomes an antagonistic and alienated public.
3. Properly managed National Parks and other protected areas are lands least subject to negative disturbances, and provide threatened species and ecological communities with the greatest opportunity for recovery and future security.
4. The most effective strategy is to manage threatening processes such that species and ecological communities do not become threatened with extinction.
5. Identification of a species or ecological community is the first step in any protection plan.
6. If level of threat is to be assessed, it is necessary to know where a species or ecological community is to be found, how many there are over what area, and what changes are occurring over time.
7. To correct a decline in a species or ecological community, it is critical to know and understand the cause of the decline.
8. The causes of decline in species or communities are unlikely to be confined to small areas, and are best managed through action at the level of entire landscapes.
9. Priority will be given to species and ecological communities with a high probability of extinction, and those unique to the Northern Territory.
10. Priority will be given to implementing management of threatened ecological communities, species and their habitats that are cost effective and offer the best prospects of success for one or more species.
11. Species and communities restricted to small areas of essential habitat, or dependent

on such habitats during some part of their life cycle, may be particularly vulnerable to threats.

12. Captive breeding and re-establishment in the wild is fundamental to recovery of viable populations of species with a high probability of extinction.
13. Successful management of threatened species, their habitats and ecological communities, and threatening processes, may require the cooperation of other jurisdictions.

3. OBJECTIVES

1. To identify species and ecological communities subject to various levels of threat of extinction, and to monitor changes in abundance and distribution as a basis for reviewing levels of threat of extinction.
2. To establish a system of managed National Parks and other protected areas that provide optimal opportunity for the recovery of species and ecological communities under threat.
3. To investigate the causes of decline in the distribution and abundance of species and ecological communities, and develop methods to ameliorate the impacts on species or ecological communities.
4. To undertake the captive breeding and propagation of species with a high probability of extinction.
5. To implement prescriptions for the recovery of species and ecological communities subject to threat.
6. To research, trial and implement landscape-scale management of factors known to threaten species and ecological communities.
7. To develop a legislative framework which provides for the identification and management of species and ecological communities threatened with extinction.
88. To cooperate with other institutions and governments in the management of species and ecological communities threatened with extinction, and for the fulfilment of Australia's international obligations.
99. To keep the public informed on, and involved in the conservation of species and ecological communities threatened with extinction.
10. To seek public donations and sponsorship for the research, management, captive breeding and propagation of threatened species.

4. BACKGROUND

4.1 Extinction and Threatening Processes in the Northern Territory

Possibly as many as 18 species of vertebrate have disappeared from the Northern Territory since the time of the first long term European settlement at Victoria Settlement, Port Essington in 1828. Of these, 15 are species of mammal from the central Australian desert, a greater loss than has occurred in recent times in any other part of the world. No plant or invertebrate is presumed extinct. An additional 85 vertebrates and 128 plants have been listed as possibly threatened or insufficiently known.

Extinction results from any change in the environment that causes population to fall to zero individuals. Change may involve new factors (e.g. a new parasite or competitor), or changes in the magnitude of existing factors (e.g. climate change). While it is difficult to be certain of the precise causes of extinction in any particular instance, dramatic change in climate, catastrophes such as meteor impacts and volcanic eruptions, and transcontinental invasion by new kinds of predator, competitor or disease, are thought to have been involved in the "natural" extinctions of things such as dinosaurs, woolly mammoths, the large marsupials of South America, and the Pleistocene extinctions of giant marsupials, giant emus and giant goannas in the Northern Territory. While not occurring on such a large scale, the extinctions recorded in the Northern Territory over the past 150 years are not insignificant in comparison to these major paleontological events.

Although the Northern Territory remains one of the least disturbed natural environments on earth, that natural environment has changed over the past 150 years. A wide variety of exotic herbivores, predators, diseases and plants have been introduced. Major factors such as the management of fire have undergone fundamental alteration, in some cases with devastating consequences. Most of these changes result from human activities new to the Territory, and from alteration of long established patterns of human behaviour.

Most extinctions in the Northern Territory over the past 150 years resulted from environmental changes wrought by man. These environmental changes are often referred to as "threats" to the survival of native species, or may more generally be referred to as "threatening processes". Introduced weeds, exotic animals and unmanaged fire may pose a direct threat to some species, or may modify habitats such that native species are unable to thrive. While these sources of threat are clearly of greatest importance in the Northern Territory, others such as pollution, changed water regimes, land clearing or overharvesting may become important in some circumstances.

Understanding why a particular species is threatened with extinction, and so being able to do something about it, requires an understanding of the factors that naturally affect a population of a particular species, in combination with the effects of the multitude of things that man has changed. All species of plant and animal exhibit natural patterns of change in abundance.

Changes in the size of populations are caused by climatic variation, catastrophes such as wild fires, cyclones, variation in rainfall or food supplies, or the pressures exerted by competitors, predators and diseases. These agents of population change may act across an entire population, causing simultaneous population change over large areas of land, or impact on only one or a few parts of a population. Species often exist as a series of semi-isolated small populations, each of

which may at some time become extinct without leading to loss of the entire species. These changes are natural, and are usually of no major concern to conservationists. Add an altered frequency and intensity of fire, populations of stock and feral species, and a new disease to the pre-existing factors, and it can be a recipe for extinction.

In some cases the factor preventing the recovery of a species or community is relatively simply determined. In other cases the answers have not been found. For the Numbat in south-western Western Australia, removal of the introduced fox is sufficient to bring about the recovery of the population. In contrast, the Northern Territory's threatened Gouldian Finch appears subject to negative impacts from feral and domestic grazing animals, an altered fire regime and a possibly new parasitic disease. The cause/s of the decline, and the solution to recovery remain mysteries.

Solutions to the problem of decline in species and ecological communities is critical to maintenance of the Territory's identity. The world has plenty of cattle, horses, cats, foxes, water buffalo, cane toads and *Mimosa pigra*. These are not the things that make the Northern Territory different from the rest of the world. Nor are they the things that people will travel half way round the world to see and marvel at. The world retains only one species of Bilby, only one kind of Gouldian Finch, and only one kind of Carpentarian Rock Rat. If we lose one of these, or one of our other threatened species, we lose a part of the Territory forever. With each loss the Territory becomes less like the Territory, and more like just anywhere on earth.

5. ACTIVITIES UNDER THIS STRATEGY

The activities listed in this strategy apply to all forms of land tenure across the Northern Territory. Pastoral land, National Parks, Aboriginal land and freehold all contain threatened species, and all are potentially subject to threatening processes. The actions describe the things that need to be done. The manner in which the actions are undertaken, will inevitably vary according to land tenure and the interests of landholders.

6. OBJECTIVE ONE

To identify species and ecological communities subject to various levels of threat of extinction, and to monitor changes in abundance and distribution as a basis for reviewing levels of threat of extinction.

6.1 Identifying and Recording Species and Ecological Communities, and Determining their Distributions

Actions

The Northern Territory Herbarium and the Museum and Art Gallery of the Northern Territory will:

- develop and maintain comprehensive collections of the plants and animals of the Northern Territory; and
- continue to seek out and describe new species of plant and animal, and revise and improve the taxonomy of the Territory's flora and fauna.

The Parks and Wildlife Commission of the Northern Territory, and the Department of Lands, Planning and Environment will:

- continue to improve the definition and mapping of ecological communities in the Northern Territory; and
- continue to monitor change in the species and ecological communities of the Northern Territory.

The Parks and Wildlife Commission of the Northern Territory will:

- undertake biological surveys dedicated to improving knowledge of areas about which little is known; and
- cooperate with other government agencies, academic and research institutions, museums, herbaria, botanic gardens, zoos, and wildlife parks to ensure that it maintains the best possible data base on the composition and distribution of the Territory's flora and fauna, and introduced species.

6.2 Identifying Species and Ecological Communities Subject to the Threat of Extinction

Actions

The Parks and Wildlife Commission of the Northern Territory will:

- compile and analyse existing information on the distribution and abundance of species and ecological communities as a basis for determining which species and communities are threatened;
- classify the Northern Territory's species and ecological communities according to the categories of threat adopted by the World Conservation Union (IUCN) (IUCN 1994); and
- review the classification of species conservation status on at least a five yearly basis.

The IUCN classification lists species as “Extinct”, “Extinct in the Wild”, “Critically Endangered”, “Endangered”, “Vulnerable”, “Lower Risk”, “Data Deficient” or “Not Evaluated”. These definitions have been adopted to conform to international standards, and provide for both easy comparison with classes of threatened species in other places and a set of readily understood standards. The term “threatened” is used in a generic sense to denote all species that are classed as extinct, extinct in the wild, critically endangered, endangered or vulnerable.

The IUCN provides definitions for each of these classifications and also a basis for determining which class is appropriate for what particular species. The definitions are as follows.

- “Extinct”:
A taxon is Extinct where there is no reasonable doubt that the last individual has died.
- “Extinct in the Wild”:
A taxon is Extinct in the Wild when it is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range.
- “Critically Endangered”:
A taxon is Critically Endangered when it is facing an extremely high risk of extinction in the wild in the near future.
- “Endangered”:
A taxon is Endangered when it is not Critically Endangered but is facing a very high risk of extinction in the wild in the near future.
- “Vulnerable”:
A taxon is Vulnerable when it is not Critically Endangered or Endangered but is facing a high risk of extinction in the wild in the medium-term future.
- “Lower Risk”:
A taxon is Lower Risk when it has been evaluated, and does not satisfy the criteria of Extinct, Extinct in the Wild, Critically Endangered, Endangered or Vulnerable.
- “Data Deficient”:
A taxon is Data Deficient when there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status.
- “Not Evaluated”:
A taxon is Not Evaluated when it has not yet been assessed against the criteria.

Extract from the World Conservation Union (IUCN) (IUCN 1994).

7. OBJECTIVE TWO

To establish a system of managed National Parks and other protected areas that provides optimal opportunity for the recovery of species and ecological communities under threat.

7.1 Establishing a system of National Parks and Reserves

Actions

The Parks and Wildlife Commission of the Northern Territory will:

- give priority to the inclusion of threatened species and their habitats, and ecological communities in the design and establishment of National Parks; and
- establish other forms of protected area so as to effectively protect and manage threatened species and ecological communities not included in National Parks.

7.2 Ensuring National Parks and other protected areas provide for the security and recovery of threatened species and ecological communities

Actions

The Parks and Wildlife Commission of the Northern Territory will, for all the National Parks and protected areas under its management, undertake:

- development and implementation of fire management plans;
- the development and implementation of weed management plans;
- the development and implementation of plans to control feral herbivores;
- the development and implementation of plans to control cats and foxes;
- to control feral honey bees;
- seek to control or mitigate the effects of other threatening processes.

8. OBJECTIVE THREE

To investigate the causes of decline in the distribution and abundance of species and ecological communities, and develop methods to ameliorate the impacts on particular species.

8.1 Establishing Priorities

Actions

The Parks and Wildlife Commission of the Northern Territory will:

- establish a priority list of threatened species and ecological communities for investigation to improve understanding of the causes and nature of decline.

8.2 Improving Understanding of the Distribution, Abundance and Habitat Requirements of Species and Ecological Communities Subject to Threat

Actions

The Parks and Wildlife Commission of the Northern Territory will undertake:

- detailed investigations of the distributions and abundances of threatened species and ecological communities; and
- quantitative studies of the habitat requirements of species and ecological communities subject to threat.

8.3 Determining Factors Limiting the Recovery of Species and Ecological Communities Subject to Threat

Actions

The Parks and Wildlife Commission will undertake:

- quantitative assessment of the demographics of threatened species;
- quantitative assessment of the processes affecting the habitats and survival of populations of threatened species, and threatened communities;
- development of prescriptions for controlling the negative effects of processes threatening particular endangered species and communities; and

- investigate, and develop appropriate management prescriptions to correct any instance where human activity and its consequences directly threatens a population or ecological community.

9. OBJECTIVE FOUR

To undertake the captive breeding and propagation of species with a high probability of extinction.

9.1 Ex-situ Populations

Actions

The Parks and Wildlife Commission of the Northern Territory will establish *ex-situ* populations of threatened species at the Territory Wildlife Park, Alice Springs Desert Park and the Darwin Botanic Gardens, to:

- ensure the survival of species with a high probability of extinction in the wild;
- minimise the effects of inbreeding and genetic drift on levels of genetic variability in the captive and wild populations;
- provide stock for reintroduction to the wild; and
- allow the public to see and learn about threatened species and threatening processes, and to become involved in captive management.

9.2 Re-establishing Populations of Threatened Species

Actions

The Parks and Wildlife Commission of the Northern Territory will:

- develop a prioritised list of sites identified as suitable for reintroduction of critically endangered species; and
- use reintroduction programs to re-establish populations of critically endangered species in areas where threatening factors have abated, been removed and are subject to ongoing management.

10. OBJECTIVE FIVE

To implement prescriptions for the recovery of particular species and ecological communities subject to threat.

10.1 Optimising the Chances of Success

Actions

The Parks and Wildlife Commission of the Northern Territory will:

- review potential management outcomes for all threatened species and ecological communities, and assign priorities based on prospects of success and cost effectiveness; and
- give priority to the implementation of management prescriptions on National Parks and other protected areas.

10.2 Implementing and Improving Management of Threatened Species and Ecological Communities

Actions

- The Parks and Wildlife Commission of the Northern Territory will produce publicly available Management Programs for the recovery of species and ecological communities threatened with extinction; and
- monitor responses to management such that deficiencies may be detected and improvements made.

11. OBJECTIVE SIX

To research, trial and implement landscape-scale management of factors known to threaten species and ecological communities.

11.1 Researching and Trialing the Management of Threatening Processes

Actions

The Parks and Wildlife Commission of the Northern Territory will:

- cooperate with other government agencies and landholders in research into the broad scale control of rabbits, especially control using Rabbit Calicivirus Disease and “follow up”

controls;

- investigate improvement in methods for the control of feral cats;
- research the threats posed to granivorous birds and other fauna and flora by the combination of fire, and grazing by feral and domestic herbivores;
- research the control of escaped pasture species on its National Parks and other protected areas;
- research the pattern and configuration of rainforest patches and surrounding savannas required to ensure the long term survival of rainforests;
- investigate the habitat needs of the highly mobile elements of the Territory's fauna;
- in collaboration with the Bushfires Council and landholders, research and trial the integration and monitoring of fire management across landscapes; and
- undertake, in cooperation with landholders, a trial of landscape management of threats from at least one feral herbivore.

11.2 Implementing Management of Threats across the Landscape

Actions

The Parks and Wildlife Commission of the Northern Territory will:

- once appropriate prescriptions have been trialed, implement (in collaboration with other government agencies and landholders) landscape scale management of threatening processes; and
- ensure that such management is subject to broad scale monitoring in order to correct deficiencies and develop improvements.

12. OBJECTIVE SEVEN

To develop a legislative framework that better provides for the identification and management of species and ecological communities threatened with extinction.

12.1 Revising the Legislative Framework

Actions

The Parks and Wildlife Commission of the Northern Territory will work towards a legislative

framework that provides for:

- the identification and categorisation of species and their habitats, and ecological communities subject to threat;
- the declaration of areas of habitat essential to the survival of species and ecological communities;
- improved capacity to implement management programs for threatened species and their habitats, and ecological communities;
- improved capacity to enter into co-management agreements with landholders; and
- public scrutiny of listings of threatened species, declarations of essential habitat and management programs.
- penalties for non-compliance in accordance with national standards.

13. OBJECTIVE EIGHT

To co-operate with other institutions and governments in the management of species and ecological communities threatened with extinction, and for the fulfilment of Australia's international obligations.

13.1 Co-operating in the Management of Species and Ecological Communities Threatened with Extinction

Actions

The Parks and Wildlife Commission of the Northern Territory will cooperate with:

- other institutions in the identification and description of native plants and animals, research into threatened species and ecological communities, and the development, implementation and monitoring of steps to ameliorate the effects of threatening processes;
- other institutions in the development and management of programs for the cultivation/captive breeding of species subject to threat;
- the Commonwealth government, and other State and Territory governments in prioritising and sharing the work needed to ensure recovery of species and ecological communities under threat;
- the Commonwealth government, and other State and Territory governments in sharing

information on and understanding of the problems and processes associated with the management of threatened species and ecological communities; and

- endeavour to use the Australian and New Zealand Council of Environment and Conservation Council (ANZECC) as the central forum for developing co-operative actions.

13.2 Meeting International Obligations

Actions

The Parks and Wildlife Commission of the Northern Territory will meet Australia's international obligations involving threatened species and ecological communities in the Northern Territory through:

- close liaison with the Commonwealth government in the development of international obligations;
- close liaison with the Commonwealth government when it establishes and implements programs to meet those obligations; and by
- ensuring the Commonwealth government is provided with accurate and timely information.

14. OBJECTIVE NINE

To keep the public informed on, and involved in, the conservation of species and ecological communities threatened with extinction.

14.1 Informing the Public

Actions

The Parks and Wildlife Commission of the Northern Territory will endeavour to inform the public on all matters related to threatened species and ecological communities using:

- frequent, and timely press and other media releases;
- information on threatened species and ecological communities published in both scientific and other literature;
- the Junior Ranger Program;
- public fora on matters or events of importance;

- presentations to special interest groups; and through
- the development, and making available a user friendly data base providing information of threatened species and ecological communities.

14.2 Involving the Public

Actions

The Parks and Wildlife Commission of the Northern Territory will involve the public by:

- involving volunteers in the management of and research on species and ecological communities under threat;
- advising landholders of the presence of threatened species and ecological communities on their lands;
- advising landholders on the management of threatened species; and through
- cooperative management agreements with landholders, especially in relation to the management of essential habitats, and the control of fire, weeds, and feral animals.

14.3 Being Accountable

Actions

The Parks and Wildlife Commission of the Northern Territory will be publicly accountable for its management of species and ecological communities, and will:

- produce and make public a five yearly review of the conservation status of threatened species and ecological communities;
- undertake annual reviews of the efficiency, effectiveness and relevance of each project on threatened species and ecological communities; and
- undertake a five yearly review of this Strategy.

15. OBJECTIVE TEN

To seek public donations and sponsorship for the research, management and captive breeding and propagation of threatened species.

15.1 Seeking Financial Support

Actions

- investigate new policy directions for the Commonwealth research and development tax concessions and incentives scheme;
- seek sponsorship from the private sector and major organisations for high priority research, captive breeding and propagation, and re-establishment projects;
- maintain an active program of soliciting donations from the general public for identified threatened species projects, and research and management of threatened species and processes in general.

16. GLOSSARY

ANZECC	Australian and New Zealand Environment and Conservation Council which comprises relevant ministers from each State and Territory government, the Commonwealth Government and the New Zealand Government.
Biological Diversity	The variety of life on earth, consisting of animals, plants and microorganisms, the genes they contain and the ecosystems of which they are a part.
Conservation	The protection, maintenance, management, sustainable use, restoration and enhancement of the natural environment.
Essential Habitat	That part or those parts of the habitat of any species or ecological community essential to its survival.
Gene Pool	The sum total of the genetic make up of a species.
Ecological Community	An integrated assemblage of native species that inhabits a particular area in nature. Of primary importance is that it be a describable entity that may be consistently recognisable within the landscape. It could include, for example, marine benthic communities, terrestrial plant communities or freshwater stream communities.
Ex-situ	In cultivation (plants) or in captivity (animals); translocated from a natural habitat.
IUCN	The World Conservation Union, formerly the International Union for the Conservation of Nature and Natural Resources.
Protected Areas	National Parks, nature reserves, marine parks and other equivalent areas of lands or waters either primarily set aside for conservation purposes or for multiple-use that includes conservation.
Species	A group of biological entities which interbreed to produce fertile offspring and/or possess common characters derived from a common gene pool.