



Australian Government
Department of the Environment and Heritage

F A C T S H E E T

Threatened species and ecological communities in Australia

Australia is home to more than one million species, many of which are found nowhere else in the world. About 85% of the continent's flowering plants, 84% of mammals, more than 45% of birds and 89% of inshore, temperate-zone fish are endemic — that is, they are only found in Australia.

Over the 200 years since European settlement, extensive clearing of native vegetation has removed, changed or fragmented habitats. Human activity and natural events such as fire, drought and flood continue to change Australia's ecology. Such change affects the interactions within ecological communities, and can reduce their diversity and threaten the survival of many native species.

Since settlement, hundreds of species have become extinct in Australia, including at least 50 bird and mammal, 4 frog and more than 60 plant species.

It is likely that other species have disappeared too, without our knowledge. Many other species are considered to be threatened and are listed under Australian Government legislation as endangered or vulnerable. More than 310 species of native animals and over 1180 species of native plants are at risk of disappearing forever.



Numbat
Myrmecobius fasciatus
(vulnerable)
Illustration by
Sue Stranger ©

Threatened ecological communities

An ecological community is an integrated assembly of native species that inhabits a particular area in nature. Species within such communities interact and depend on each other — for example, for food or shelter.

Australian Government legislation allows for the listing of ecological communities as threatened. This is the first step to promoting their recovery under Australian Government law, supported by the preparation of recovery plans and threat abatement plans.

Examples of endangered ecological communities are the grassy white box woodlands and the natural temperate grassland of the Southern Tablelands of New South Wales and the Australian Capital Territory; the Buloke woodlands of the Riverina and Murray-Darling depression bioregions; the brigalow belt in south-eastern Queensland; and the critically endangered swamps of the Fleurieu Peninsula in South Australia.



Anemone buttercup
Ranunculus anemoneus
(vulnerable)
Illustration by
Barbara Cameron-Smith

Why conserve species and ecological communities?

Australia's natural areas have environmental values that we have an obligation to conserve and restore for future generations. They also have special aesthetic and cultural values, with both aquatic (water) and terrestrial (land) environments being integral parts of the traditional culture of Australia's indigenous peoples.

Conservation of our biological diversity is important because it not only helps to provide clean air and water, but also has major economic benefits. These include maintaining agricultural productivity, providing ecotourism opportunities, serving as a source of medicines, and supplying renewable resources such as construction materials, clothing and paper.

Why are species threatened?

Plants and animals interact in complex relationships with each other and with factors such as soils, water, climate and landscape. A variety of threatening processes contribute individually and in combination to the decline of native species, or cause major changes to ecological communities. Such processes include the loss, change and fragmentation of habitat; the effects of invasive plants, animals and diseases; and direct effects of human activities. Some of these processes are described in more detail below.

Habitat loss, change and fragmentation

Following disturbance by natural events like fires, floods and storms, habitats recover slowly by gradual regeneration and by species spreading from nearby areas. However, the scale of disturbances caused by human activities, especially where several threatening processes exist in an area, may be too great to allow habitats to recover, so that some

species and ecological communities continue to decline.

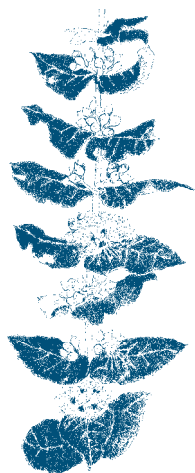
Clearing of native vegetation fragments habitats and isolates populations of plants and animals. Small habitat remnants cannot support populations for long periods and are more susceptible to threats and loss of biodiversity following local disturbances, especially if there are no suitable habitats nearby from which the animals and plants can recolonise. Conservation reserves, isolated from each other by large areas of disturbed or cleared land, often cannot ensure the long-term survival of species and ecological communities and may need to be linked by native vegetation 'corridors' so that animals can move between them.



Gouldian finch
Erythrura gouldiae
(endangered)
Illustration by
Barbara Cameron-Smith

Marine and estuarine habitats are affected by run-off from urban, agricultural and industrial areas. This can carry herbicides, pesticides, fertilisers, sewage, oil, industrial effluent and sediments into the water.

Similarly, freshwater habitats are sensitive to changes in water flow, temperature and sediments, which can result from drainage, dredging, water impoundments, clearing snags from rivers, bank modification, irrigation, flood mitigation and roads.



Buxton gum
Eucalyptus crenulate
(endangered)
Illustration by
Barbara Cameron-Smith

Invasive plants and animals

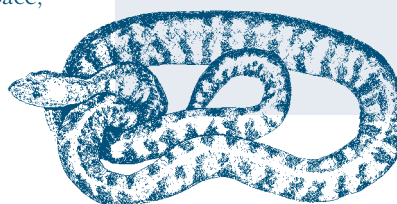
Many animal and plant species have been introduced into Australia for agriculture, for sport and as pets, and some have been brought in inadvertently. Some introduced species now flourish in native ecosystems, causing a significant impact. Animals and plants introduced for agricultural activities contribute to the economic development of Australia, but can also cause significant damage to the ecology of natural environments. In particular, livestock that has become established in the wild, such as rabbits, goats, cattle, buffalo, pigs, donkeys, horses and camels, degrade natural habitats by intensive or selective grazing. Animals with hard hoofs compact the soil and prevent the regeneration of vegetation, thus contributing to erosion. Many introduced animals compete with native animals for food, shelter and breeding sites.

Introduced predators such as foxes and feral cats are now widespread. They prey on ground-dwelling birds and mammals like the mallee fowl, numbat, chuditch (western quoll), woylie (brush-tailed bettong), greater stick-nest rat and various species of lizards, snakes and rock wallabies. Without adequate control programs, these predators threaten the successful reintroduction into the wild of endangered species like the mala (rufous hare-wallaby).

Marine organisms such as fish, crustaceans, molluscs, worms and seaweed are transported into new areas in the ballast water of ships. The introduced Northern Pacific seastar (a starfish) was discovered in Tasmanian waters in 1992. It has displaced several native seastars and is thought to be the cause of the decline of the spotted handfish in the Derwent estuary.

Environmental weeds are plants that invade and thrive in places where they do not usually occur. Major invasions change the natural diversity and dynamics of ecological communities, threatening the survival of many plants and animals. Environmental weeds rapidly invade disturbed sites and compete with native plants for space, nutrients and sunlight. They do not always provide the food or shelter that native animals need, and may instead provide food and shelter for feral animals.

We can all contribute to maintaining Australia's biological diversity by taking responsibility for our local environment.



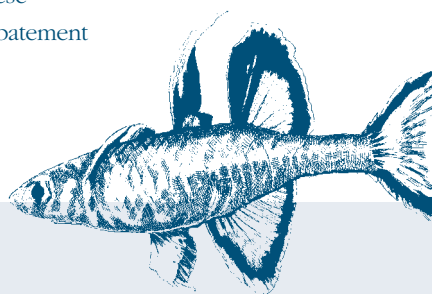
Woma
Aspidites ramsayi
(endangered)
Illustration by
Barbara Cameron-Smith

Australian Government legislation

The Australian Government promotes the conservation of threatened species and biodiversity through the *Environment Protection and Biodiversity Conservation Act 1999*. The Act applies to environmental matters of national significance and provides for:

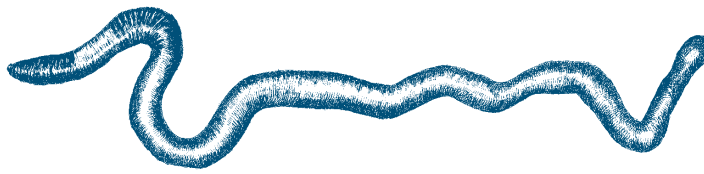
- identification and listing of threatened species and ecological communities
- development of recovery plans for listed species and ecological communities
- recognition of major threats, referred to as key threatening processes
- reducing the impacts of these processes through threat abatement plans, where appropriate.

Honey blue-eye
Pseudomugil mellis
(vulnerable)
Illustration by
Barbara Cameron-Smith



International cooperation

Australia has a strong commitment to the conservation of native flora and fauna around the world, and is party to a number of international conventions and agreements. These include the Convention on Biological Diversity, which covers all ecosystems, species and genetic resources, and requires countries to develop and implement strategies for the sustainable use and protection of biodiversity; and the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES), which regulates the trade in endangered species.

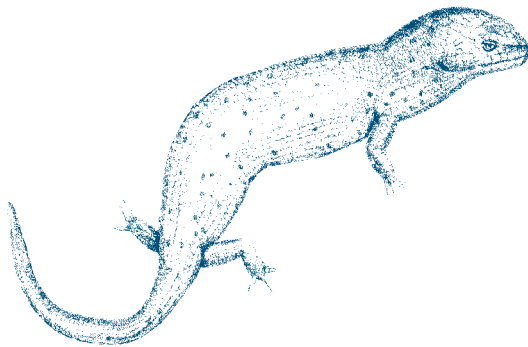


Giant Gippsland earthworm
Megascaloides australis
(vulnerable)
Illustration by
Barbara Cameron-Smith

The *Environment Protection and Biodiversity Conservation Act 1999* has six categories of threatened species and ecological communities:

1. **Extinct** — there is no reasonable doubt that the last member of the species has died.
2. **Extinct in the wild** — the species is known to survive only in cultivation or in captivity, or as a naturalised population well outside its past range.
3. **Critically endangered** — the species is facing an extremely high risk of extinction in the wild in the immediate future.
4. **Endangered** — the species is not critically endangered, but it is facing a very high risk of extinction in the wild in the near future.
5. **Vulnerable** — the species is not critically endangered or endangered, but it is facing a high risk of extinction in the wild in the medium-term future.
6. **Conservation dependent** — the species is the focus of a specific conservation program without which the species would become vulnerable, endangered or critically endangered within five years.

Threatened ecological communities can be recognised under three of the above categories: **critically endangered, endangered or vulnerable.**



Pygmy blue-tongued lizard
Tiliqua adelaidensis
(endangered)
Illustration by
Barbara Cameron-Smith

For more information, contact:



Australian Government

Department of the Environment and Heritage

GPO Box 787, Canberra ACT 2601

Community Information Unit **1 800 803 772**

Web site www.deh.gov.au



Natural Heritage Trust

Helping Communities Helping Australia

A Commonwealth Government Initiative