

Threatened species

Murray region

State Plan target

By 2015 there is an increase in the recovery of threatened species, populations and ecological communities.

Background

The *Threatened Species Conservation Act 1995* and *Fisheries Management Act 1994* list species, populations and ecological communities that are at high risk of extinction. A total of 139 threatened species occur or did occur within the Murray region (Table 1).

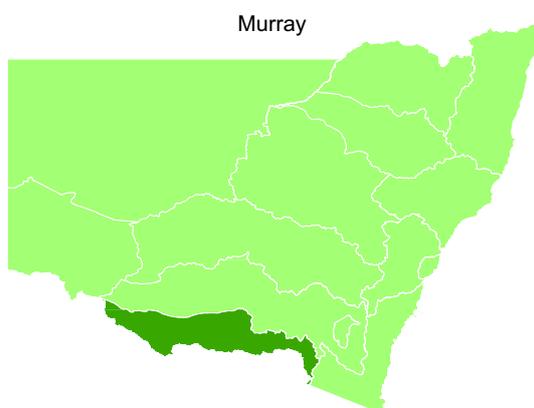
A detailed technical report describes the methods used to derive the information contained in this report. At the time of publication of the *State of the catchments (SOC) 2010* reports, the technical reports were being prepared for public release. When complete, they will be available on the DECCW website: www.environment.nsw.gov.au/publications/reporting.htm.

Note: All data on natural resource condition, pressures and management activity included in this SOC report, as well as the technical report, was collected up to January 2009.

Table 1 The number of species listed under the *Threatened Species Conservation Act 1995* or *Fisheries Management Act 1994* that occur or did occur in the Murray region. The categories reflect different levels of extinction risk ('critically endangered' indicates the highest risk, and 'vulnerable' the lowest).

	Presumed extinct	Critically endangered	Endangered	Vulnerable	Total
Fauna					
Mammals	6	0	6	14	26
Birds	0	1	9	42	52
Amphibians	0	0	5	2	7
Reptiles	0	0	0	5	5
Fish	0	1	3	1	5
Invertebrates	0	0	1	0	1
Flora					
Plants	3	2	19	19	43
Algae	0	0	0	0	0
Fungi	0	0	0	0	0
Regional total	9	4	43	83	139
State total	76	21	549	409	1055

Map of the catchment



Assessment

Condition

Indicator: sustainability of threatened fauna and flora

Consistent with the intent of threatened species legislation, recovery is defined here as a decline in the risk of extinction. This is equivalent to an increase in the likelihood of a species being sustained. The sustainability of threatened fauna and flora species within the region was assessed using modified IUCN Red-List Criteria (IUCN 2001). In particular, estimates of total population size and distribution, trends in population size and distribution over time, and direct estimates of extinction risk from population modelling were used to score sustainability for each species at the regional scale. Species were assessed only if they were being actively monitored at a regional or larger scale. Endangered populations were not assessed.

Excluding species listed as presumed extinct, the sustainability of only six threatened fauna species could be assessed in the Murray region. One of these species scored very good, while the other five scored poor or very poor. In comparison, the sustainability of 31 threatened fauna species was assessed at the state scale, of which two (six per cent) scored good or very good. No threatened flora species could be assessed for sustainability in the Murray region. In comparison, the sustainability of 11 threatened flora species was assessed at the state scale, of which two (18 per cent) scored good or very good.

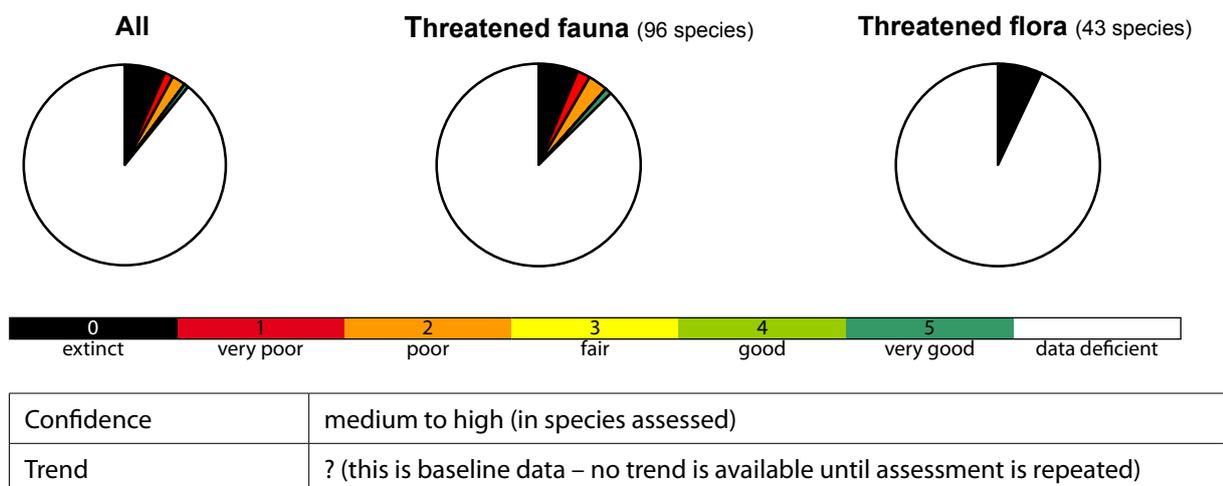


Figure 1 Sustainability of threatened fauna and flora within the Murray region, assessed using modified IUCN Red-List Criteria (numbers are the scores used in the threatened species recovery assessment)

Index of threatened species' recovery

An index of threatened species' recovery was calculated as the mean of sustainability scores for all threatened entities that were able to be assessed. However, given that sustainability scores were available for only six of 130 threatened species within the region (excluding the nine species presumed extinct), the index is inadequate without an increase in the number of threatened species being monitored.

Threatened species' recovery	2.2
Confidence	low
Trend	?

Pressures

Major pressures on threatened species in New South Wales include:

- the introduction of exotic animals and plants (see the invasive species report)
- the clearing and disturbance of native vegetation (see the native vegetation report)
- changes to fire regimes
- changes to water flows (see the riverine ecosystems, groundwater dependent ecosystems, and wetlands reports)
- the introduction of exotic diseases
- overfishing and fishing by-catch.

The interaction between these pressures and their relationship with trends in the status of threatened species are complex and cannot easily be summarised.

Management activity

State level

There are a number of critical actions to improve the condition of threatened species, especially relating to the management of exotic animals and plants (pests), the condition and extent of native vegetation, water use and fire. Some of these actions are described briefly in the fauna report. Targeted actions to recover threatened species, populations and endangered ecological communities, and to manage key threatening processes, are described in the threatened species priorities action statement (PAS) for each species. This includes surveys to clarify the distribution of a species, weed and pest management programs, guidelines for threatened species issues in development assessments, research into factors influencing the survival of threatened species, and community education programs. Funding all PAS actions remains a challenge for government agencies; while there are numerous species listed as threatened, only a few are managed under recovery plans. Some threats, most notably those posed by cats and chytrid fungus, remain largely unaddressed due to the lack of effective control techniques.

Other actions include:

- protection and rehabilitation, through:
 - preparing nominations for threatened ecological communities for the Scientific Committee and preparing identification guidelines
 - preparing recovery plans, such as for the priority Box Gum Woodland endangered ecological community, and finalising recovery plans for the endangered plains wanderer and swift parrot
 - developing and maintaining the Threatened Species Tool and associated data for property vegetation planning
 - supporting the Murray Catchment Management Authority (CMA) in its implementation of incentive schemes for the management of threatened species' habitats
 - providing comprehensive advice to consent authorities regarding the protection of threatened biodiversity and its habitats, in both the development of local environmental plans and in assessing proposed developments

- implementing priority actions for a wide range of species considered to be at risk of extinction within the region, including the mountain pygmy possum, southern corroboree frog, oaklands diuris, spotted tree frog, booroolong frog, southern bellfrog, swift parrot, and plains wanderer
- the development of a Regional Biodiversity Management Plan, which will have a strong emphasis on the implementation of priority actions
- research, including:
 - collecting, storing and researching the seeds of NSW flora, through the NSW Seedbank's SeedQuest program. To date, 35 per cent of NSW species, including 30 per cent of the state's threatened species, are represented in the seedbank. Seed-related information (eg germination and viability information) is available on most species collected. Where possible, representative populations of threatened species are held in the seedbank and may be available for translocation or research
 - an ongoing program of botanical research into the plants of NSW, run by the National Herbarium of NSW at the Botanic Gardens Trust. This research includes the identification and description of threatened plant, algal and fungal species. The identification and naming of threatened species is the first key step in understanding these species
- education, through:
 - Industry & Investment NSW (I&I) courses on subjects including property management planning for natural resources management and vertebrate pest management. More information on I&I courses is available at www.dpi.nsw.gov.au/agriculture/profarm/courses.

Regional level

At the regional level, the Murray CMA is undertaking the following activities in relation to the threatened species target:

- the nest egg project, involving (from July 2006 to June 2008) the protection of 1300 ha of priority habitat for the ground nesting plains wanderer, brolga and bush stone-curlew
- implementing priorities action statements
- implementing projects to enhance habitats for the bush stone-curlew, the southern corroboree frog, the booroolong frog and the squirrel glider
- developing the Murray catchment biodiversity strategy.

Local level

There are a number of other groups undertaking significant work in the region that is contributing to better outcomes for threatened species. These groups include:

- Australian National University, which is conducting research in the Murray catchment, for example a 'case-control study' on declining woodland birds
- Charles Sturt University, which is conducting research in the Murray catchment on subjects including:
 - the spatial ecology of foxes in landscapes inhabited by bush stone-curlews
 - interactions between frugivores and their resources
 - a case study with the painted honeyeater – an Australian mistletoe specialist
 - grazing management in Oolambeyan National Park for plains wanderer conservation.

Further reading

IUCN 2001, *IUCN Red List Categories and Criteria: Version 3.1*, IUCN Species Survival Commission, IUCN, Gland, Switzerland and Cambridge, UK.

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