

# Threatened species

## Namoi 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 141 threatened species occur or did occur within the Namoi region (Table 1).

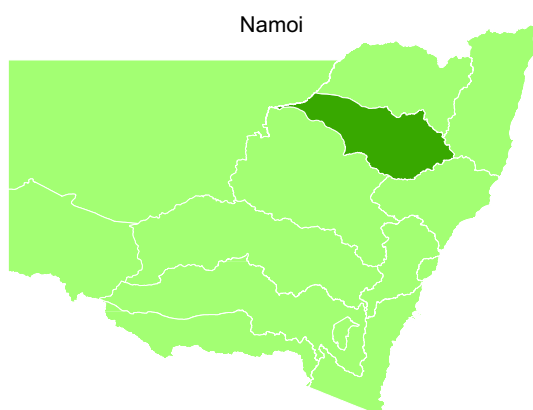
A detailed technical report describes the methods used to derive the information contained in this report. At the time of publication of the *State of the catchments (SOC) 2010* reports, the technical reports were being prepared for public release. When complete, they will be available on the DECCW website: [www.environment.nsw.gov.au/publications/reporting.htm](http://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** Number of species listed under the *Threatened Species Conservation Act 1995* or *Fisheries Management Act 1994* that occur or did occur in the Namoi 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
<b>Fauna</b>					
Mammals	13	0	4	24	41
Birds	1	0	14	36	51
Amphibians	0	0	1	3	4
Reptiles	0	0	1	5	6
Fish	0	1	1	1	3
Invertebrates	0	0	1	0	1
<b>Flora</b>					
Plants	3	0	12	20	35
Algae	0	0	0	0	0
Fungi	0	0	0	0	0
<b>Regional total</b>	<b>17</b>	<b>1</b>	<b>34</b>	<b>89</b>	<b>141</b>
<b>State total</b>	<b>76</b>	<b>21</b>	<b>549</b>	<b>409</b>	<b>1055</b>

## Map of the catchment



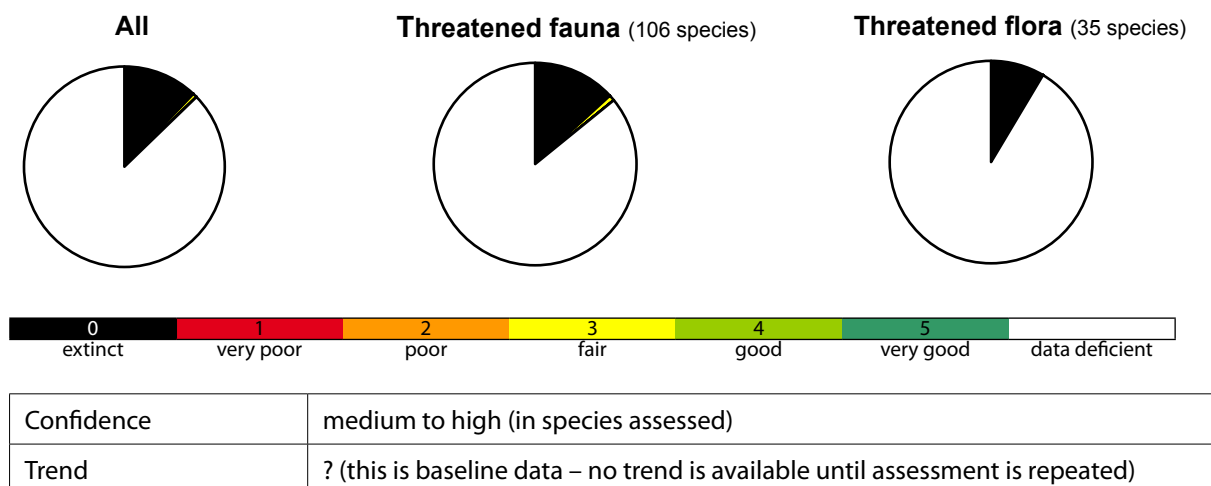
## Assessment

### 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 one threatened fauna species could be assessed in the Namoi region. This species scored fair. 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 Namoi 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 Namoi 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 one of 124 threatened species within the region (excluding the 17 species presumed extinct), the index is inadequate without an increase in the number of threatened species being monitored.

Threatened species' recovery	3.0
Confidence	low
Trend	?

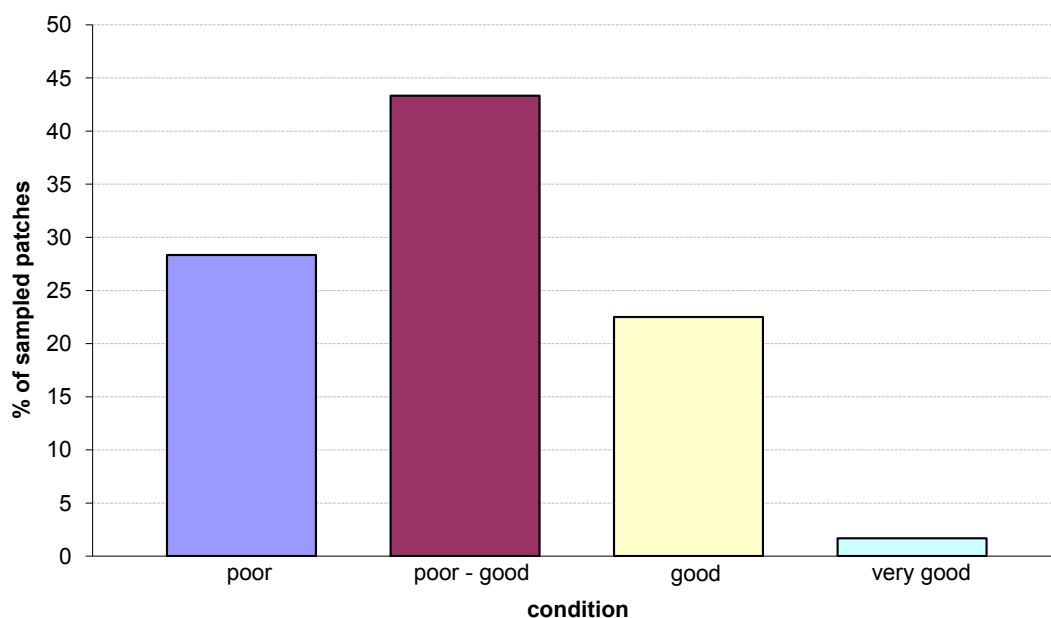
## Pressures

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.

### Pressure case study: Box Gum Woodland



**Figure 2 Condition of the White Box Yellow Box Blakely's Red Gum Woodland endangered ecological community in the Namoi region (data: DECCW unpublished)**

The 'clearing of native vegetation' is listed as a key threatening process under the *Threatened Species Conservation Act 1995*. A heavily cleared endangered plant community in the Namoi region is the White Box Yellow Box Blakely's Red Gum Woodland. It is found in six vegetation types in the Namoi region, which, on average, have been cleared by more than 85 per cent.

Patches of the community were sampled throughout NSW between 2004 and 2007. Of the 115 patches sampled in the Namoi region, only 25 per cent were in good or very good condition. There was a wide range of patch sizes, from less than one ha to over 1500 ha, but no relationship was found between patch size and condition.

## 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
  - preparing priorities action statements
- 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](http://www.dpi.nsw.gov.au/agriculture/profarm/courses).

### Regional level

At the regional level, the Namoi Catchment Management Authority (CMA) is undertaking the following activities in relation to the threatened species target:

- A project focusing on the distribution, habitat use, and conservation requirements of koalas, to guide investment

- A project identifying the current distribution of the booroolong frog (including the discovery of new populations) and the development of site management plans for future implementation once the status of the species is better understood in the catchment
- A number of projects that are benefiting the brush-tailed rock-wallaby. In particular, sites known to have once had brush-tailed rock-wallaby populations have been resurveyed this year to identify any remaining populations on private land. A collaborative project with the National Parks and Wildlife Service, Livestock Health and Pest Authorities (LHPAs) and landholders is being undertaken to control fox predation around known colonies of this species
- The funding of a community-based survey project to assess the status, distribution and potential management requirements of four threatened species – the bush stone-curlew, grey-headed flying-fox, spotted-tailed quoll, and barking owl
- A project focused on looking at the status of threatened bats in the Namoi region and potential management requirements to protect these species
- The funding of research into a series of threatened plant species in the eastern half of the catchment, particularly in the granite country. The only remaining population of velvet wattle (*Acacia pubifolia*) in NSW has subsequently been protected on private land through a Namoi CMA agreement with the landholder
- The funding of projects in relation to biodiversity conservation, managing regionally significant vegetation for conservation, and controlling the key threats of weeds and pests, which also have specific benefits for the conservation of threatened species and their habitats.

## Local level

Other groups are undertaking work in the region that is contributing to better outcomes for threatened species. These groups include:

- LHPAs. A number of sites across the Central North LHPA area are under conservation management. This is focused primarily on sites containing threatened ecological communities, with a range of broader benefits for biodiversity
- many organisations that are undertaking their own work within the catchment, using their own resources. For example, the Nature Conservation Trust is looking at investing in further properties in the Namoi catchment for in-perpetuity covenants, focusing on high conservation value sites that contain threatened species and ecological communities
- universities in the region, which are undertaking different research and management projects for a range of threatened species and endangered ecological communities.

## 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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