

State of the catchments 2010

# Threatened species

## Northern Rivers 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 414 threatened species occur or did occur within the Northern Rivers region (Table 1).

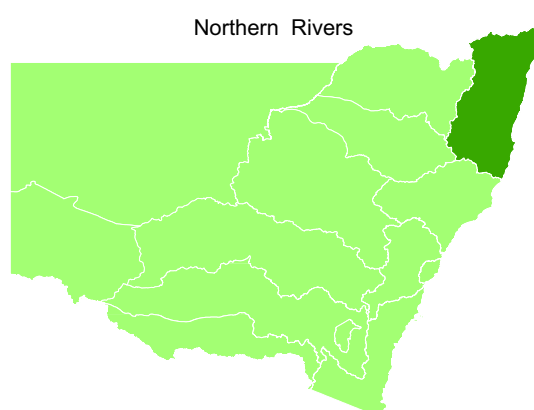
A detailed technical report describes the methods used to derive the information contained in this report. At the time of publication of the *State of the catchments (SOC) 2010* reports, the technical reports were being prepared for public release. When complete, they will be available on the DECCW website: [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** The number of species listed under the *Threatened Species Conservation Act 1995* or *Fisheries Management Act 1994* that occur or did occur in the Northern Rivers 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	2	0	5	33	40
Birds	1	1	21	74	97
Amphibians	0	0	10	9	19
Reptiles	0	0	2	11	13
Fish	0	0	3	1	4
Invertebrates	0	0	12	0	12
<b>Flora</b>					
Plants	4	2	129	94	229
Algae	0	1	0	0	0
Fungi	0	0	0	0	0
<b>Regional total</b>	<b>7</b>	<b>4</b>	<b>182</b>	<b>222</b>	<b>414</b>
<b>State total</b>	<b>76</b>	<b>21</b>	<b>549</b>	<b>409</b>	<b>1055</b>

## Map of the catchment



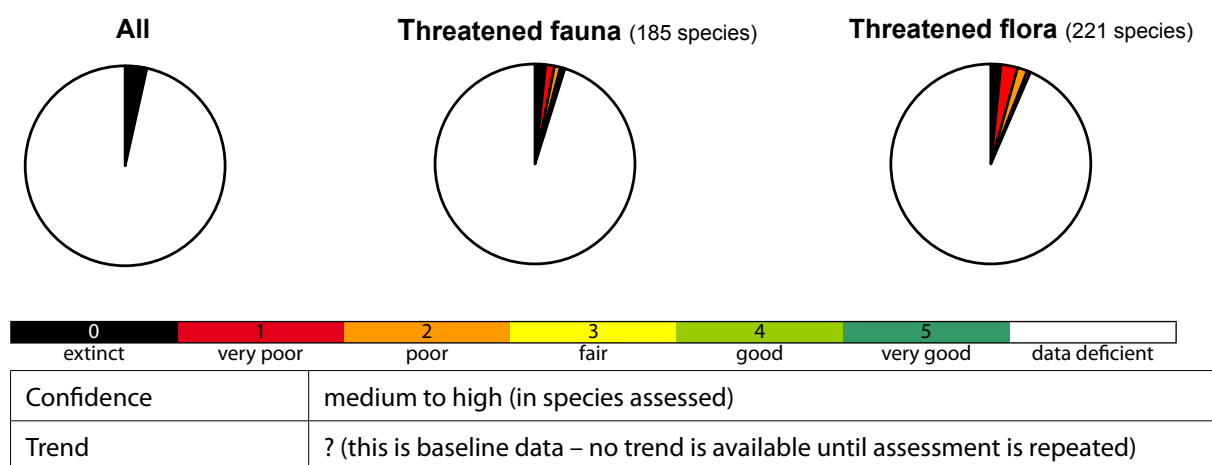
## Assessment

### 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 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 nine threatened fauna species could be assessed in the Northern Rivers region. Of these, eight scored poor or very poor, and none scored good or very good. 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. The sustainability of only four threatened flora species could be assessed in the Northern Rivers region. Of these, one species scored very good, and two scored poor or very poor. In comparison, the sustainability of 11 threatened flora species were 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 Northern Rivers 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 13 of 399 threatened species within the region (excluding the seven species presumed extinct), the index is inadequate without an increase in the number of threatened species being monitored.

Threatened species' recovery	1.9
Confidence	low
Trend	?

## Pressures

Major pressures on threatened species in New South Wales include:

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

The interaction between these pressures and their relationship with trends in the status of threatened species is 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, including nine threatened species recovery plans directing on-ground recovery action, and plans for four endangered ecological communities (EECs) under recovery action
  - implementing the Lord Howe Island Biodiversity Management Plan (BMP) and Threatened Species Priorities Action Statement (PAS) in partnership with the Lord Howe Island Board and the Northern Rivers Catchment Management Authority (CMA), including rodent eradication, priority weed eradication and control, the Lord Howe placostylus captive breeding project and habitat management, and threatened flora habitat protection



- managing individual projects focused on community awareness, species surveys, habitat enhancement for threatened flora and fauna, and recovery actions that assist the recovery of multiple threatened species and EECs
- finalising the Border Ranges Rainforest Biodiversity Management Plan and preparing a biodiversity management plan for the entire Northern Rivers CMA region, including spatial and recovery action priorities (to assist in prioritising the delivery of the PAS)
- implementing the Border Ranges Rainforest and Northern Rivers BMPs, the PAS, and single species recovery plans through providing expert advice, support and data to partnership projects
- supporting various conservation partners including the Northern Rivers CMA, the NSW Nature Conservation Trust, and Tweed and Byron Shire councils in the delivery of priority conservation works in identified high conservation value areas
- projects to protect and enhance habitat for threatened species (eg the Coxen's fig parrot, eastern bristlebird, and multi-flora species) on private land, with partners including the Foundation of Parks and Wildlife, Northern Rivers CMA, EnviTE, Indigenous groups, and landholders
- the preparation and delivery of the Coffs Harbour and Northern Rivers 'Connect Kids to Threatened Species Education Kit' and preparation of an Indigenous 'Connect Kids to Threatened Species Education Kit'
- assisting Indigenous communities to prepare biodiversity restoration and management plans and Nature Conservation Council hotspot fire management plans for community owned land, focusing on the protection and habitat restoration of threatened species and ecological communities, and assisting the general community to apply for funding to implement property plans
- a partnership with an Indigenous community to protect a culturally significant population of the endangered swamp orchid (*Phaius australis*)
- conservation translocation programs for *Fontainea oraria* and *Eleaocarpus williamsianus*
- population enhancement of the endangered northern population of eastern bristlebirds through captive breeding, population and habitat monitoring, and habitat restoration and management on private and public land in partnership with Queensland Department of Environment and Resource Management and Northern Rivers CMA
- developing and maintaining the Threatened Species Tool and associated data for property vegetation planning
- 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
- protecting koalas by assisting local government authorities with koala plans of management for their local government areas; implementing the Hawkes Nest Endangered Koala Recovery Plan; and providing koala field survey training to an Indigenous community group to assist with koala management on their properties
- providing threatened species, biodiversity and koala habitat education and training to local government authority staff
- state agencies developing old growth forest and rainforest protocols and providing threatened species advisory notes for the Private Native Forestry Code of Practice

- the recovery (overall) of approximately 275 ha of EEC and threatened species' habitat. This comprises the enhancement of 75 ha of four individual threatened flora species' habitat, 50 ha of four individual threatened fauna species' habitat, and 125 ha of four EECs
- education, including:
  - the development of the Connect Kids Kit project – a threatened species education support kit for primary school children (CD-rom and web based)
  - biodiversity demonstrations, training sessions, study tours and field days (CMA)
  - 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)
- monitoring, evaluation and reporting, including:
  - implementing standardised monitoring programs for the Hastings River mouse and spotted-tail quoll populations within the Gondwanan Rainforest World Heritage Area
- 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.

## 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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