

## Schedule 4 – Threatened Species Management



# Threatened Species Management

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# Threatened Species Management

## 1.0 Introduction and Background

More than 80 species of native plants and animals that used to exist in NSW are now extinct, and around 1000 more are threatened with extinction. In 1995, the Government introduced the *Threatened Species Conservation Act 1999*. While this legislation brought significant increases in knowledge and many important gains, more powerful tools were required to achieve conservation and recovery of threatened biodiversity.

The *Threatened Species Legislation Amendment Act 2004* integrates conservation with mainstream decision-making. The new reforms are aimed at establishing better frameworks and processes so that landholders, developers, farmers, community groups and government agencies can more effectively contribute to protecting the State's biodiversity.

The Amendment Act puts greater emphasis on land-use planning which focuses on the protection and restoration of native vegetation and threatened species habitat at the landscape scale and integrates with the Government's other reforms to natural resource management and planning. In rural areas, these reforms involve embedding threatened species conservation within native vegetation protection to deliver conservation incentives for landholders.

Under the Amendment Act, the Minister for the Environment may certify the native vegetation reform package, consisting of the:

- (a) *Native Vegetation Act 2003* and the regulations under that Act,
- (b) statewide standards and targets for natural resource management issues recommended under the *Natural Resources Commission Act 2003* and adopted by the Government,
- (c) CAPs under the *Catchment Management Authorities Act 2003*, and
- (d) protocols and guidelines adopted or made under the regulations under the *Native Vegetation Act 2003*, the *Catchment Management Authorities Act 2003* and the *Natural Resources Commission Act 2003*.

The Minister may confer biodiversity certification even if the native vegetation reform package does not comprise all its elements (for example, prior to CAPs being finalised). However, to ensure that all elements of the package continue to address biodiversity, the Minister for the Environment can review certification of the package as changes are made.

This biodiversity certification further streamlines the regulatory system for farmers who apply for PVPs. They do not need to prepare a test of significance (as was previously required under the *Environmental Planning and Assessment Act 1979*) for threatened species and are protected from prosecution or the need for licensing for any activity set out in an approved PVP. This allows threatened species conservation to be integrated into everyday management of rural landscapes. In addition, incentives may be provided to help farmers conserve threatened species or habitat. This Schedule will be updated by DEC with specific information on biodiversity certification of the package, including CAPs, on commencement of the new legislation.

The *Fisheries Management Act 1994* lists additional threatened species reliant on aquatic habitats, as well as endangered populations and endangered ecological communities. For the most part in the

Central West catchment area, these species are also covered under the *Threatened Species Conservation Act 1995*.

## 2.0 Threatened Species Targets

### *Statewide Targets set by the Natural Resources Commission*

The following Target has been set by the Natural Resource Commission. The statewide target below specifically relates to threatened species and the Central West catchment.

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

The following targets have been set by the Central West CMA in relation to biodiversity. The Management Targets listed in the CAP contribute to the achievement of the Biodiversity Catchment Target.

### *Central West Water Quality Catchment Target*

**CTB1** - By 2016, 460,000ha (5%) of the catchment is managed primarily for biodiversity outcomes (aquatic and terrestrial) including ecosystem diversity

### *Central West Water Quality Management Targets*

There are four Biodiversity Management Targets listed in the CAP (MTB1-4). These targets are designed to all contribute to an improvement in the overall biodiversity of the catchment measured by the Biodiversity Catchment Target.

## 3.0 Overview of Threatened Species in the Central West

The Central West Catchment has a broad diversity of flora and fauna partly due to the confluence of montane and temperate to semi-arid ecological influences. Approximately 1.3% of the Catchment is currently managed as National Park or Nature Reserve. A further 3% is managed as State Forest, either in plantations or as selectively logged native forests.

The vegetation in the catchment has been largely cleared for agriculture, with the large remaining blocks of native vegetation either in national parks, nature reserves, state forests or travelling stock routes, on the upper slopes and ridges or on soils unsuitable for cultivation.

Wetlands are a major ecological feature of the catchment and include the major streams and watercourses, the Macquarie Marshes, the various small cowals mainly to the west and north of Narromine, the Bogan Floodplain particularly near Gongolgon and the lower Castlereagh floodplain. The box-ironbark woodlands are another major ecological feature of the catchment and many of the woodland bird and mammal species reliant on these woodlands are in decline due to a reduction in extent and condition.

The current major threats to biodiversity in the catchment are further loss of species from unviable remnants. Remaining remnants that are too small, too isolated and subject to stochastic events such as grazing, fire, drought or disease will, in many instances, result in species decline.

There are a number of mammals, birds and plant species already known to be extinct in the catchment. These include the Bilby, Burrowing Bettong, Eastern Hare Wallaby, and *Euphrasia arguta* (a herb). Despite extensive searches, it appears another plant *Indigofera efoliata*, may now potentially be extinct as the only known collection is from the Central West Catchment.

There are 42 threatened flora species listed in the schedules of the *Threatened Species Conservation Act 1995* and the *Fisheries Management Act 1994* recorded in the Catchment. Of these, 18 are endangered, 24 are listed as vulnerable. Additional to this, one species, *Euphrasia arguta*, is considered extinct in the region.

Seventy two species of fauna listed in the schedules of the *Threatened Species Conservation Act 1995* and the *Fisheries Management Act 1994* are found in the Central West catchment. Of these, 18 are listed as endangered, 53 are listed as vulnerable, and one species, Olive Perchlet, is listed as an endangered population.

Of these 72 species, only the Bathurst Copper Butterfly is endemic to the catchment. Of the remainder many species will rely on retention, protection and enhancement of remaining woodland remnants, grasslands and wetlands, as well as control of feral predator numbers in areas where these occur.

Aboriginal cultural heritage in the Central West catchment includes a connection to the landscape and the native plants and animals within it, and a responsibility to care for country. Many native species, including threatened species, are of cultural and social significance to local Aboriginal communities, in addition to their biological value. The management and use of natural resources remains an important part of local Aboriginal communities, including the enjoyment of valued foods and medicines, caring for the land, passing on cultural knowledge and strengthening social bonds.

A number of conservation actions reappear in the threatened species profiles for species found in the Central West catchment, these include:

1. protection of remnant native vegetation, wetlands and hollow-bearing trees,
2. retention of native shrubs and woody debris on the ground,
3. retention of wildlife corridors,
4. control of feral predators,
5. fire management,
6. weed control, and
7. pollution control.

These key actions will also benefit many other flora and fauna species and prevent them from becoming threatened. Lists of threatened species of flora, fauna and communities are provided in the tables below.

## **4.0 Threatened Species, Endangered Populations, Endangered Ecological Communities and Key Threatening Processes in the Central West**

The following listings under the *Threatened Species Conservation Act 1995* and the *Fisheries Management Act 1994* are correct as on the 4 May, 2005. Updated listings can be obtained from [www.threatenedspecies.environment.nsw.gov.au](http://www.threatenedspecies.environment.nsw.gov.au) and [www.fisheries.nsw.gov.au/threatened\\_species/general/what\\_is\\_currently\\_listed](http://www.fisheries.nsw.gov.au/threatened_species/general/what_is_currently_listed)

Species in bold are also listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

## FAUNA

Scientific Name	Common Name	Type of species	Level of Threat	Recovery Plan Status *
<i>Ambassis agassizii</i> - endangered population	Olive Perchlet population in Western NSW	Fish	Endangered Population	
<i>Anseranas semipalmata</i>	Magpie Goose	Bird	Vulnerable	
<i>Antechinomys laniger</i>	Kultarr	Marsupial	Endangered	5
<b><i>Aprasia parapulchella</i></b>	<b>Pink-tailed Worm-lizard</b>	Reptile	Vulnerable	
<i>Archaeophya adamsi</i>	Adam's Emerald Dragonfly	Aquatic Invertebrate	Vulnerable	
<i>Ardeotis australis</i>	Australian Bustard	Bird	Endangered	
<i>Bidyanus bidyanus</i>	Silver perch	Fish	Vulnerable	
<i>Botaurus poiciloptilus</i>	Australasian Bittern	Bird	Vulnerable	
<i>Burhinus grallarius</i>	Bush Stone-curlew	Bird	Endangered	4
<i>Cacatua leadbeateri</i>	Pink Cockatoo	Bird	Vulnerable	
<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	Bird	Vulnerable	
<i>Calyptorhynchus banksii</i>	Red-tailed Black-cockatoo	Bird	Vulnerable	
<i>Calyptorhynchus lathami</i>	Glossy Black-cockatoo	Bird	Vulnerable	1
<i>Cercartetus nanus</i>	Eastern Pygmy-possum	Marsupial	Vulnerable	
<i>Certhionyx variegatus</i>	Pied Honeyeater	Bird	Vulnerable	
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	Bat	Vulnerable	
<i>Chalinolobus picatus</i>	Little Pied Bat	Bat	Vulnerable	
<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (eastern subspecies)	Bird	Vulnerable	
<b><i>Dasyurus maculatus</i></b>	<b>Spotted-tailed Quoll</b>	Marsupial	Vulnerable	6
<i>Ephippiorhynchus asiaticus</i>	Black-necked Stork	Bird	Endangered	
<b><i>Erythrotriorchis radiatus</i></b>	<b>Red Goshawk</b>	Bird	Endangered	
<i>Falco hypoleucos</i>	Grey Falcon	Bird	Vulnerable	
<i>Falsistrellus tasmaniensis</i>	Eastern False Pipistrelle	Bat	Vulnerable	
<i>Grantiella picta</i>	Painted Honeyeater	Bird	Vulnerable	
<i>Grus rubicundus</i>	Brolga	Bird	Vulnerable	
<i>Hamirostra melanosternon</i>	Black-breasted Buzzard	Bird	Vulnerable	
<i>Hoplocephalus bitorquatus</i>	Pale-headed Snake	Reptile	Vulnerable	
<b><i>Hoplocephalus bungaroides</i></b>	<b>Broad-headed Snake</b>	Reptile	Endangered	
<i>Hoplocephalus stephensii</i>	Stephens' Banded Snake	Reptile	Vulnerable	
<b><i>Lathamus discolor</i></b>	<b>Swift Parrot</b>	Bird	Endangered	1
<b><i>Leipoa ocellata</i></b>	<b>Malleefowl</b>	Bird	Endangered	2
<i>Limosa limosa</i>	Black-tailed Godwit	Bird	Vulnerable	
<i>Litoria aurea</i>	Green and Golden Bell Frog	Amphibian	Endangered	
<i>Litoria booroolongensis</i>	Booroolong Frog	Amphibian	Endangered	2
<b><i>Litoria raniformis</i></b>	<b>Southern Bell Frog</b>	Amphibian	Endangered	
<i>Lophoictinia isura</i>	Square-tailed Kite	Bird	Vulnerable	
<i>Maccullochella</i>	Trout Cod	Fish	Endangered	

<i>macquariensis</i>				
<i>Melanodryas cucullata cucullata</i>	Hooded Robin (south-eastern form)	Bird	Vulnerable	
<i>Melithreptus gularis gularis</i>	Black-chinned Honeyeater (eastern subspecies)	Bird	Vulnerable	
<i>Miniopterus schreibersii oceanensis</i>	Eastern Bentwing-bat	Bat	Vulnerable	
<i>Mogurnda adspersa</i>	Purpoe Spotted Gudgeon population in western NSW	Fish	Endangered Population	
<i>Neophema pulchella</i>	Turquoise Parrot	Bird	Vulnerable	
<i>Nettapus coromandelianus</i>	Cotton Pygmy-geese	Bird	Endangered	
<i>Ninox connivens</i>	Barking Owl	Bird	Vulnerable	4
<i>Ninox strenua</i>	Powerful Owl	Bird	Vulnerable	
<i>Notopala sublineata</i>	River snail	Aquatic Invertebrate	Endangered	
<b><i>Nyctophilus timoriensis</i></b>	<b>Eastern Long-eared Bat (southeastern form)</b>	Bat	Vulnerable	
<i>Oxyura australis</i>	Blue-billed Duck	Bird	Vulnerable	
<i>Pachycephala inornata</i>	Gilbert's Whistler	Bird	Vulnerable	
<i>Pachycephala olivacea</i>	Olive Whistler	Bird	Vulnerable	
<b><i>Paralucia spinifera</i></b>	<b>Purple Copper Butterfly</b>	Invertebrate	Endangered	5
<i>Petaurus australis</i>	Yellow-bellied Glider	Marsupial	Vulnerable	5
<i>Petaurus norfolcensis</i>	Squirrel Glider	Marsupial	Vulnerable	
<b><i>Petrogale penicillata</i></b>	<b>Brush-tailed Rock-wallaby</b>	Marsupial	Endangered	3
<i>Phascogale tapoatafa</i>	Brush-tailed Phascogale	Marsupial	Vulnerable	1
<i>Phascolarctos cinereus</i>	Koala	Marsupial	Vulnerable	4
<b><i>Polytelis swainsonii</i></b>	<b>Superb Parrot</b>	Bird	Vulnerable	2
<i>Pomatostomus temporalis temporalis</i>	Grey-crowned Babbler (eastern subspecies)	Bird	Vulnerable	
<b><i>Pseudomys pilligaensis</i></b>	<b>Pilliga Mouse</b>	Rodent	Vulnerable	
<b><i>Pteropus poliocephalus</i></b>	<b>Grey-headed Flying-fox</b>	Bat	Vulnerable	
<i>Pyrholaemus sagittatus</i>	Speckled Warbler	Bird	Vulnerable	
<b><i>Rostratula benghalensis ssp australis</i></b>	<b>Painted Snipe</b>	Bird	Endangered	
<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheath-tail-bat	Bat	Vulnerable	
<i>Scoteanax rueppellii</i>	Greater Broad-nosed Bat	Bat	Vulnerable	
<i>Sminthopsis macroura</i>	Stripe-faced Dunnart	Marsupial	Vulnerable	
<i>Stagonopleura guttata</i>	Diamond Firetail	Bird	Vulnerable	
<i>Stictonetta naevosa</i>	Freckled Duck	Bird	Vulnerable	
<i>Suta flagellum</i>	Little Whip Snake	Reptile	Vulnerable	
<i>Tyto novaehollandiae</i>	Masked Owl	Birds	Vulnerable	
<i>Varanus rosenbergi</i>	Rosenberg's Goanna	Reptile	Vulnerable	
<i>Vespadelus baverstocki</i>	Inland Forest Bat	Bat	Vulnerable	
<i>Vespadelus troughtoni</i>	Eastern Cave Bat	Bat	Vulnerable	
<b><i>Xanthomyza phrygia</i></b>	<b>Regent Honeyeater</b>	Bird	Endangered	

\* DEC is has released draft Priority Action Statements for all species listed under the Threatened Species Conservation Act 1995 that will be additional to Recovery Plans and provide operational direction. Recovery Plans may still be used where applicable, including those under the *Fisheries Management Act 1994*. The Priority Action Statements are in draft form for public comment until August 2006.

## FLORA

Scientific Name	Common Name	Type of species	Level of Threat	Recovery Plan Status
<i>Austrostipa wakoolica</i>	A spear-grass	Grass	Endangered	
<b><i>Baeckea kandos</i></b>	<b>A Baekea</b>	Shrub	Endangered	
<b><i>Calotis glandulosa</i></b>	<b>Mauve Burr-daisy</b>	Forb	Vulnerable	
<i>Cheilanthes sieberi</i> subsp. <i>pseudovellea</i>	A Cloak-fern	Fern	Endangered	
<i>Derwentia blakelyi</i>	A Derwentia	Shrub	Vulnerable	
<b><i>Dichanthium setosum</i></b>	<b>Bluegrass</b>	Grass	Vulnerable	
<b><i>Digitaria porrecta</i></b>	<b>Finger Panic Grass</b>	Grass	Endangered	
<b><i>Diuris pedunculata</i></b>	<b>Small Snake Orchid</b>	Orchid	Endangered	
<b><i>Diuris sheaffiana</i></b>	<b>Pine Donkey Orchid</b>	Orchid	Vulnerable	
<b><i>Eucalyptus alligatrix</i> subsp. <i>miscella</i></b>	<b>A Stringybark</b>	Tree	Vulnerable	
<b><i>Eucalyptus cannonii</i></b>	<b>Capertee Stringybark</b>	Tree	Vulnerable	1
<i>Eucalyptus canobolensis</i>	Silver-Leaf Candlebark	Tree	Vulnerable	
<i>Eucalyptus corticosa</i>	A Stringybark	Tree	Vulnerable	
<b><i>Eucalyptus pulverulenta</i></b>	<b>Silver-leafed Gum</b>	Mallee	Vulnerable	
<b><i>Eucalyptus robertsonii</i> subsp. <i>hemisphaerica</i></b>	<b>Robertson's Peppermint</b>	Tree	Vulnerable	
<i>Euphrasia scabra</i>	Rough Eyebright	Forb	Endangered	2
<b><i>Goodenia macbarronii</i></b>	<b>McBarron's Goodenia</b>	Forb	Vulnerable	
<i>Grevillea divaricata</i>	A Grevillea	Shrub	Endangered	
<b><i>Grevillea evansiana</i></b>	<b>Evans Grevillea</b>	Shrub	Vulnerable	1
<b><i>Grevillea obtusiflora</i></b>	<b>A Grevillea</b>	Shrub	Endangered	5
<b><i>Homoranthus darwinoides</i></b>	<b>A Homoranthus</b>	Shrub	Vulnerable	
<b><i>Indigofera foliata</i></b>	<b>Leafless Indigo</b>	Shrub	Endangered	2
<b><i>Leionema sympetalum</i></b>	<b>Rylstone Bell</b>	Shrub	Vulnerable	1
<b><i>Lepidium hyssopifolium</i></b>	<b>Aromatic Peppercress</b>	Forb	Endangered	
<i>Monotaxis macrophylla</i>	Large-leafed Monotaxis	Forb	Endangered	
<b><i>Persoonia marginata</i></b>	<b>Clandulla Geebung</b>	Shrub	Vulnerable	
<i>Philothea ericifolia</i>	A Wax-flower	Shrub	Vulnerable	
<b><i>Pomaderris brunnea</i></b>	<b>Brown Pomaderris</b>	Shrub	Vulnerable	
<i>Pomaderris queenslandica</i>	Scant Pomaderris	Shrub	Endangered	
<b><i>Prostanthera stricta</i></b>	<b>A Mint-bush</b>	Shrub	Vulnerable	1
<b><i>Pterostylis cobarensis</i></b>	<b>Greenhood Orchid</b>	Orchid	Vulnerable	
<b><i>Pultenaea glabra</i></b>	<b>Smooth Bush-Pea</b>	Shrub	Vulnerable	
<i>Pultenaea</i> sp. 'Olinda'	A Bush Pea	Shrub	Endangered	
<b><i>Rulingia procumbens</i></b>	<b>A Kerrawang</b>	Shrub	Vulnerable	
<i>Sida rohlenae</i>	Shrub Sida	Forb	Endangered	
<b><i>Swainsona murrayana</i></b>	<b>Slender Darling Pea</b>	Forb	Vulnerable	
<b><i>Swainsona plagiotropis</i></b>	<b>Red Darling Pea</b>	Forb	Vulnerable	
<b><i>Swainsona recta</i></b>	<b>Small Purple-pea</b>	Forb	Endangered	2
<i>Swainsona sericea</i>	Silky Swainson-pea	Forb	Vulnerable	
<b><i>Tylophora linearis</i></b>	<b>A Tylophora</b>	Climber	Endangered	
<b><i>Zieria ingramii</i></b>	<b>Keith's Zieria</b>	Shrub	Endangered	4
<b><i>Zieria obcordata</i></b>	<b>A Zieria</b>	Shrub	Endangered	4

**Status Key:** 1 = initial planning, 2 = In preparation, 3 = Draft Complete, 4 = Draft Exhibited, 5 = Approved, 6 = National

In addition to the recovery plans identified against certain species, there are three recovery plans addressing multiple species being: A) Grassland flora of the Southern Tablelands (Recovery plan status 1), B) Micro bats recovery plan (Recovery plan status 2) and, C) Lost threatened flora of south-eastern NSW (Recovery plan status 5)

## ENDANGERED ECOLOGICAL COMMUNITIES

Scientific Name	Common Name	Level of Threat
Aquatic ecological community in the natural drainage system of the lowland catchment of the Darling River	Aquatic ecological community in the natural drainage system of the lowland catchment of the Darling River	Threatened
Artesian Springs Ecological Community	Artesian Springs Ecological Community	Endangered Ecological Community
<i>Acacia harpophylla</i> within the Brigalow Belt South, Nandewar and Darling Riverine Plains Bioregions	Brigalow Community	Endangered Ecological Community
<i>Eucalyptus coolibah</i> - <i>E. largiflorens</i> woodland of the northern riverine plains in the Darling Riverine Plains and Brigalow Belt South bioregions	Coolibah-Black Box woodland of the northern riverine plains in the Darling Riverine Plains and Brigalow Belt South bioregions	Endangered Ecological Community
<i>E. conica</i> on alluvials of South West Slopes, Darling Riverine Plains & the Brigalow Belt South	Fuzzy Box on alluvials of South West Slopes, Darling Riverine Plains & the Brigalow Belt South	Endangered Ecological Community
Mt Canobolas <i>Xanthoparmelia</i> Lichen Community	Mt Canobolas <i>Xanthoparmelia</i> Lichen Community	Endangered Ecological Community
<i>Acacia pendula</i> Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Penplain, Murray-Darling Depression, Riverina and NSW South western Slopes bioregions	Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Penplain, Murray-Darling Depression, Riverina and NSW South western Slopes bioregions	Endangered
<i>E. albens</i> – <i>E. melliodora</i> – <i>E. blakelyi</i> Woodland	Box-Gum Woodland	Endangered Ecological Community

## KEY THREATENING PROCESSES

Process	Threat Abatement Plan
Alteration to the natural flow regimes of rivers, streams, floodplains & wetlands	
Bushrock removal	
Clearing of native vegetation	
Competition and grazing by the feral European rabbit	
Competition and habitat degradation by feral goats	
Competition from feral honeybees	
Degradation of native riparian vegetation along NSW watercourses	

Ecological consequences of high frequency fires	
Feral pigs	
Hook and line fishing I areas important for the survival of threatened fish species	
Human-caused climate change	
Importation of red imported fire ants into NSW	
Infection by Psittacine circoviral (beak and feather) disease affecting endangered psittacine species and populations	
Infection of frogs by amphibian chytrid causing the disease chytridiomycosis	
Installation and operation of instream structures and other mechanisms that alter natural flow regimes of rivers and streams	
Introduction of fish to fresh water within a river catchment outside their natural range	
Invasion of native plant communities by exotic perennial grasses	
Predation by the European red fox	December 2001
Predation by feral cats	
Predation by the plague minnow ( <i>Gambusia holbrooki</i> )	August 2003
Removal of dead wood and dead trees	
Removal of Large Woody Debris	