

Appendices

CONVENTION ON BIOLOGICAL DIVERSITY

5 JUNE 1992

Preamble

The Contracting Parties,

Conscious of the intrinsic value of biological diversity and of the ecological, genetic, social, economic, scientific, educational, cultural, recreational and aesthetic values of biological diversity and its components,

Conscious also of the importance of biological diversity for evolution and for maintaining life sustaining systems of the biosphere...

Reaffirming also that States are responsible for conserving their biological diversity and for using their biological resources in a sustainable manner,

Concerned that biological diversity is being significantly reduced by certain human activities...

Noting that it is vital to anticipate, prevent and attack the causes of significant reduction or loss of biological diversity at source...

*Noting further that the fundamental requirement for the conservation of biological diversity is the *in-situ* conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings...*

Have agreed as follows:

Article 1. Objectives

The objectives of this Convention, to be pursued in accordance with its relevant provisions, are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding...

Article 6. General measures for Conservation and Sustainable Use

Each Contracting Party shall, in accordance with its particular conditions and capabilities:

(a) Develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity or adapt for their purpose existing strategies, plans or programmes which shall reflect, *inter alia*, the measures set out in this Convention relevant to the Contracting Party concerned; and

(b) Integrate, as far as possible and appropriate, the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies.

Article 7. Identification and Monitoring

Each Contracting Party shall, as far as possible and as appropriate, in particular for the purposes of Articles 8 to 10:

(a) Identify components of biological diversity important for its conservation and sustainable use having regard to the indicative list of categories set down in Annex I;

(b) Monitor, through sampling and other techniques, the components of biological diversity identified pursuant to subparagraph (a) above, paying particular attention to those requiring urgent conservation measures and those which offer the greatest potential for sustainable use;

(c) Identify processes and categories of activities which have or are likely to have significant adverse impacts on the conservation and sustainable use of biological diversity, and monitor their effects through sampling and other techniques...

Article 8. In-situ Conservation

Each Contracting party shall, as far as possible and as appropriate:

(a) Establish a system of protected areas or areas where special measures need to be taken to conserve biological diversity;

(b) Develop, where necessary, guidelines for the selection, establishment and management of protected areas or areas where special measures need to be taken to conserve biological diversity;

(c) Regulate or manage biological resources important for the conservation of biological diversity whether within or outside protected areas, with a view to ensuring their conservation and sustainable use;

(d) Promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings...

(f) Rehabilitate and restore degraded ecosystems and promote the recovery of threatened species, inter alia, through the development and implementation of plans or other management strategies;

(g) Establish or maintain means to regulate, manage or control the risks associated with the use and release of living modified organisms resulting from biotechnology which are likely to have adverse environmental impacts that could affect the conservation and sustainable use of biological diversity, taking also in to account the risks to human health;

(h) Prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species;

(i) Endeavour to provide the conditions needed for compatibility between present uses and the conservation of biological diversity and the sustainable use of its components...

(k) Develop or maintain necessary legislation and/or other regulatory provisions for the protection of threatened species and populations;

(l) Where a significant adverse effect on biological diversity has been determined pursuant to Article 7, regulate or manage the relevant processes and categories of activities; and

(m) Cooperate in providing financial and other support for in-situ conservation outlined in subparagraphs (a) to (l) above..

Article 11. Incentive Measures

Each Contracting Party shall, as far as possible and as appropriate, adopt economically and socially sound measures that act as incentives for the conservation and sustainable use of components of biological diversity..

Annex I

IDENTIFICATION AND MONITORING

Ecosystems and habitats: containing high diversity, large numbers of endemic or threatened species, or wilderness; required by migratory species; of social, economic, cultural or scientific importance; or, which are representative, unique or associated with key evolutionary or other biological processes;

Species and communities which are: threatened; wild relatives of domesticated or cultivate species; of medicinal, agricultural or other economic value; or social, scientific or cultural importance; or importance for research into the conservation and sustainable use of biological diversity, such as indicator species; and

Described genomes and genes of social, scientific or economic importance..

Appendix 2. Objectives outlined in The National Strategy for the Conservation of Australia's Biological Diversity (1996).

1. Conservation of biological diversity across Australia

- 1.1 Identify important biological diversity components and threatening processes.
- 1.2 Manage biological diversity on a regional basis, using natural boundaries to facilitate the integration of conservation and production-oriented management.
- 1.3 Improve the standards of management and protection of Australia's biological diversity by encouraging the implementation of integrated management techniques.
- 1.4 Establish and manage a comprehensive, adequate and representative system of protected areas covering Australia's biological diversity.
- 1.5 Strengthen off-reserve conservation of biological diversity.
- 1.6 Ensure the maintenance of, and where necessary strengthen, existing arrangements to conserve Australia's native wildlife.
- 1.7 Enable Australia's species and ecological communities threatened with extinction to survive and thrive in their natural habitats and to retain their genetic diversity and potential for evolutionary development, and prevent additional species and ecological communities from becoming threatened.
- 1.8 Recognise and ensure the continuity of the contribution of the ethnobiological knowledge of Australia's indigenous peoples to the conservation of Australia's biological diversity.
- 1.9 To complement in-situ measures, establish and maintain facilities for ex-situ research into and conservation of plants, animals and microorganisms, particularly those identified to by action taken in accordance with Objective 1.1.

2. Integrating biological diversity and conservation and natural resource management

- 2.1 Develop and implement national integrated policies for the ecologically sustainable use of biological resources.
- 2.2 Achieve the conservation of biological diversity through the adoption of ecologically sustainable agricultural and pastoral management practices.
- 2.3 Achieve the conservation of biological diversity through the adoption of ecologically sustainable fisheries management practices.
- 2.4 Achieve the conservation of biological diversity through the adoption of ecologically sustainable forestry management practices.
- 2.5 Manage water resources in accordance with biological diversity conservation objectives and to satisfy economic, social and community needs.
- 2.6 Achieve the conservation of biological diversity through the adoption of ecologically sustainable management practices for tourism and recreation.
- 2.7 Achieve the conservation of biological diversity through the adoption of other ecologically sustainable wildlife management practices.
- 2.8 Ensure that the social and economic benefits of the use of genetic material and products derived from Australia's biological diversity accrue to Australia.

3. Managing threatening processes

- 3.1 Monitor, regulate and minimise processes and categories of activities that have or are likely to have significant adverse impacts on the conservation of biological diversity and be able to respond appropriately to emergency situations.
- 3.2 Ensure effective measures are in place to retain and manage native vegetation, including controls on clearing.
- 3.3 Control the introduction and spread of alien species and genetically modified organisms and manage the deliberate spread of native species outside their historically natural range.
- 3.4 Minimise and control the impacts of pollution on biological diversity.
- 3.5 Reduce the adverse impacts of altered fire regimes on biological diversity.
- 3.6 Plan to minimise the potential impacts of human-induced climate change on biological diversity.
- 3.7 Repair and rehabilitate areas to restore their biological diversity.
- 3.8 Ensure the potential impacts of any projects, programs and policies on biological diversity are assessed and reflected in planning processes, with a view to minimising or avoiding such impacts.

4. Improving our knowledge

- 4.1 Provide the knowledge and understanding of Australia's biological diversity essential for its effective conservation and management.

5. Involving the community

- 5.1 Increase public awareness of and involvement in the conservation of biological diversity.
- 5.2 Expand biological diversity studies in educational curricula.

6. Australia's international role

- 6.1 Support and encourage the development of Australia's participation in international agreements for the conservation of biological diversity.
- 6.2 Seek to ensure that the activities of Australians outside of Australia are consistent with the conservation of biological diversity.
- 6.3 Ensure continued and effective international cooperation in the conservation of biological diversity, directly between governments or through relevant international governmental and non-government organisations.



7. Implementation

- 7.1 Implement the Strategy through priority actions within established time frames.
- 7.2 Ensure that appropriate arrangements are established to implement the National Strategy for the Conservation of Australia's Biological Diversity and monitor its effectiveness.
- 7.3 Ensure that the National Strategy is complemented by State and Territory and bioregional strategies, supported by effective legislation where necessary.
- 7.4 Ensure that the costs of biological diversity protection are equitably shared, such that they reflect contributions to degradation and benefits from protection or use

Appendix 3. Threatened mammals of NSW and Queensland cotton growing areas.

(A) Mammals listed as threatened under NSW's *Threatened Species Conservation Act 1995* in ecoregions where cotton is grown in NSW.

Common name	Scientific name	Conservation status	Brigalow Belt South Ecoregion (NSW NPWS 2000a, 2002a, c)	Darling Riverine Plains Ecoregion (Smith 2002)
Spotted-tailed quoll	<i>Dasyurus maculatus</i>	V		☞
Brush-tailed phascogale	<i>Phascogale tapoatafa</i>	V		☞
Stripe-faced dunnart	<i>Sminthopsis macroura</i>	V	☞	☞
Koala	<i>Phascolarctos cinereus</i>	V	☞	☞
Squirrel glider	<i>Petaurus norfolcensis</i>	V	☞	☞
Greater long-eared bat	<i>Nyctophilus timoriensis</i>	V	☞	
Yellow-bellied sheath-tail-bat	<i>Saccolaimus flaviventris</i>	V	☞	☞
Large pied bat	<i>Chalinolobus dwyeri</i>	V	☞	
Little pied bat	<i>Chalinolobus picatus</i>	V	☞	☞
Inland epstesticus (forest bat)	<i>Vespadelus baverstocki</i>	V		☞
Eastern cave bat	<i>Vespadelus troughtoni</i>	V	☞	
Greater broad-nosed bat	<i>Scoteanax rueppellii</i>	V	☞	
Forrest's mouse	<i>Leggadina forrestri</i>	V		☞
Black-striped wallaby	<i>Macropus dorsalis</i>	E	☞	
Eastern pygmy-possum	<i>Cercartetus nanus</i>	V	☞	
Brush-tailed rock wallaby	<i>Petrogale penicillata</i>	V	☞	
Pilliga mouse	<i>Pseudomys pilligaensis</i>	V	☞	
Rufous bettong	<i>Aepyprymnus rufescens</i>	V	☞	
Great pipistrelle	<i>Falsistrellus tasmaniensis</i>	V	☞	
Parma wallaby	<i>Macropus parma</i>	V	☞	
Grey-headed flying-fox	<i>Pteropus poliocephalus</i>	V	☞	
Common planigale	<i>Planigale maculata</i>	V	☞	
Kultarr	<i>Antechinus flavipes</i>	E		☞
Long-haired rat	<i>Rattus villosissimus</i>	V		☞
Platypus	<i>Ornithorhynchus anatinus</i>	VDPLP		☞
Yellow-footed antechinus	<i>Antechinus flavipes</i>	VDPLP		☞
Western-barred bandicoot	<i>Perameles bougainville</i>	E4	☞	☞
Bilby	<i>Macrotis lagotis</i>	E4	☞	☞
Sugar glider	<i>Petaurus breviceps</i>	PEDPLP		☞
Common ringtail possum	<i>Pseudocheirus peregrinus</i>	EDPLP		☞
Common brushtail possum	<i>Trichosurus vulpecula</i>	VDPLP		☞
Burrowing bettong	<i>Bettongia lesueur</i>	E4	☞	☞
Brush-tailed bettong	<i>Bettongia penicillata</i>	E4	☞	☞
Northern bettong	<i>Bettongia tropica</i>	E4		☞
Eastern hare-wallaby	<i>Lagorchestes leporides</i>	E4	☞	☞
Swamp wallaby	<i>Wallabia bicolor</i>	PEDPLP		☞
Gould's long-eared bat	<i>Nyctophilus gouldi</i>	PEDPLP		☞
White-footed rabbit-rat	<i>Conilurus albipes</i>	E4	☞	☞
Gould's mouse	<i>Pseudomys gouldii</i>	E4	☞	☞
Pale field-rat	<i>Rattus tunneyi</i>	XDPLP		☞
Western quoll	<i>Dasyurus geoffroii</i>	E4	☞	
Bridled nailtail wallaby	<i>Onychogalea fraenata</i>	E4	☞	

Greater stick-nest rat	<i>Leporillus conditor</i>	E4		
Plains rat	<i>Pseudomys australis</i>	E4		

E = Endangered

V = Vulnerable















E4 = Presumed Extinct

VDLP = Vulnerable in the Western Division of NSW as defined by Dickman et al. 1993

PEDPLP = Possibly endangered in the Western Division of NSW as defined by Dickman et al. 1993

XDPLP = Extinct in the Western Division of NSW as defined by Dickman et al. 1993

(B) Rare and threatened mammals under Queensland's Nature Conservation (Wildlife) Regulation 1994 in the Queensland portion of the entire Brigalow Belt Ecoregion.

Common name	Scientific name	Conservation status	Entire Brigalow Ecoregion (Young et al. 1999)	Condamine Catchment (CCMA 2001)	Border Rivers Catchment (BRCMA 2001)
White-footed rabbit-rat	<i>Conilurus albipes</i>	PE			
Downs hopping-mouse	<i>Notomys mordax</i>	PE			
Northern hairy-nosed wombat	<i>Lasiorchinus krefftii</i>	E			
Bridled nailtail wallaby	<i>Onychogalea fraenata</i>	E			
Plains rat	<i>Pseudomys australis</i>	E			
Spotted-tailed quoll (southern subsp.)	<i>Dasyurus maculatus maculatus</i>	V			
Common sheath-tail-bat	<i>Taphozous australis</i>	V			
Large pied bat	<i>Chalinolobus dwyeri</i>	R			
Little pied bat	<i>Chalinolobus picatus</i>	R			
Greater long-eared bat	<i>Nyctophilus timoriensis</i>	R			
Hasting's river mouse	<i>Pseudomys orallis</i>	V			

PE = Presumed extinct

E = Endangered

V = Vulnerable

R = Rare

Appendix 4. Threatened birds of NSW and Queensland cotton growing areas.

(A) Birds listed as threatened under NSW's *Threatened Species Conservation Act 1995*.

Common name	Scientific name	Conservation status	NSW sheep-wheat belt (Reid 1999)	Brigalow Belt South Ecoregion (NSW NPWS 2000a, 2002a, c)	Darling Riverine Plains Ecoregion (Smith 2002)
Malleefowl	<i>Leipoa ocellata</i>	E	☞	☞	☞
Osprey	<i>Pandion haliaetus</i>	V	☞		☞
Square-tailed kite	<i>Lophoictinia isura</i>	V	☞	☞	☞
Black-breasted buzzard	<i>Hamirostra melanosternon</i>	V	☞	☞	☞
Red goshawk	<i>Erythroriorchis radiatus</i>	E	☞	☞	☞
Grey falcon	<i>Falco hypoleucos</i>	V	☞	☞	☞
Australian bustard	<i>Ardeotis australis</i>	E	☞	☞	☞
Plains-wanderer	<i>Pedionomus torquatus</i>	E	☞	☞	
Bush thick-knee	<i>Burhinus grallarius</i>	E	☞	☞	☞
Brolga	<i>Grus rubicundus</i>	V		☞	☞
Painted snipe	<i>Rostratula benghalensis</i>	V		☞	☞
Mongolian plover	<i>Charadrius mongolus</i>				☞
Black-tailed Godwit	<i>Limosa limosa</i>	V			☞
Sanderling	<i>Calidris alba</i>	V			☞
Flock bronzewing	<i>Phaps histrionica</i>	E	☞		☞
Squatter pigeon	<i>Geophaps scripta</i>	E	☞	☞	
Red-tailed black-cockatoo	<i>Calyptorhynchus banksii</i>	V	☞	☞	☞
Glossy black-cockatoo	<i>Calyptorhynchus lathami</i>	V	☞	☞	☞
Pink cockatoo	<i>Cacatua leadbeateri</i>	V	☞	☞	☞
Purple-crowned lorikeet	<i>Glossopsitta porphyrocephala</i>	V	☞		
Superb parrot	<i>Polytelis swainsonii</i>	V	☞	☞	☞
Regent parrot	<i>Polytelis anthopeplus</i>	E	☞		☞
Swift parrot	<i>Lathamus discolor</i>	E	☞	☞	
Turquoise parrot	<i>Neophema pulchella</i>	V	☞	☞	☞
Powerful owl	<i>Ninox strenua</i>	V	☞	☞	
Barking owl	<i>Ninox connivens</i>	V	☞	☞	☞
Grass owl	<i>Tyto capensis</i>	V	☞	☞	☞
Masked owl	<i>Tyto novaehollandiae</i>	V	☞	☞	☞
Grey-crowned babbler	<i>Pomatostomus temporalis</i>	V		☞	☞
Striated grasswren	<i>Amytornis striatus</i>	V	☞		
Thick-billed grasswren	<i>Amytornis textilis</i>	E	☞		
Shy heathwren	<i>Hylacola cauta</i>	V	☞		
Redthroat	<i>Pyrrholaemus brunneus</i>	V	☞		☞
Speckled warbler	<i>Sericornis sagittatus</i>	V		☞	☞
Hooded robin	<i>Melanodryas cucullata</i>	V		☞	
Black-chinned honeyeater	<i>Melithreptus gularis</i>	V		☞	☞
Regent honeyeater	<i>Xanthomyza phrygia</i>	E	☞	☞	
Purple-gaped	<i>Lichenostomus cratitius</i>	V	☞		

honeyeater					
Painted honeyeater	<i>Grantiella picta</i>	V	☞	☞	☞
Pied honeyeater	<i>Certhionyx variegatus</i>	V	☞	☞	
Diamond firetail	<i>Emblema guttata</i>	V		☞	☞
Pink robin	<i>Petroica rodinogaster</i>	V	☞		
Southern scrub-robin	<i>Drymodes brunneopygia</i>	V	☞		
Chestnut quail-thrush	<i>Cinclosoma castanotum</i>	V	☞		
Red-lored whistler	<i>Pachycephala rufogularis</i>	E	☞		
Gilbert's whistler	<i>Pachycephala inornata</i>	V	☞	☞	☞
Black-throated finch	<i>Poephila cincta</i>	E	☞		
Brown treecreeper ¹	<i>Climacteris picumnus</i>	V	☞	☞	☞
Red-tailed tropicbird	<i>Phaethon rubricauda</i>	V		☞	
Magpie goose	<i>Anseranas semipalmata</i>	V	☞	☞	
Blue-billed duck	<i>Oxyura australis</i>	V	☞	☞	
Freckled duck	<i>Stictonetta naevosa</i>	V	☞	☞	
Cotton pygmy-geese	<i>Nettapus coromandelianus</i>	E	☞	☞	
Black bittern	<i>Ixobrychus flavicollis</i>	V	☞	☞	
Australasian bittern	<i>Botaurus poiciloptilus</i>	V	☞	☞	
Black-necked stork	<i>Ephippiorhynchus asiaticus</i>	E	☞	☞	☞

1. One subspecies of the Brown Treecreeper, (*Climacteris picumnus victoriae*), has been listed as threatened in NSW. This subspecies and *C. p. picumnus* occur in the BBSE (Schodde and Mason, 1999), however, they were not identified to the subspecies level in the field.

E = Endangered

V = Vulnerable

(B) Declining birds of the NSW Sheep-Wheat Belt (Reid 1999).

Common name	Scientific name
Emu	<i>Dromaius novaehollandiae</i>
Painted button-quail	<i>Turnix varia</i>
Speckled warbler	<i>Chthonicola sagittata</i>
Chesnut-rumped thornbill	<i>Acanthiza uropygialis</i>
Southern whiteface	<i>Aphelocephala leucopsis</i>
Jacky winter	<i>Microeca fascinans</i>
Red-capped robin	<i>Petroica goodenovii</i>
Hooded robin	<i>Petroica cucullata</i>
Eastern yellow robin	<i>Eopsaltria australis</i>
Grey-crowned babbler	<i>Pomatostomus temporalis</i>
White-browed babbler	<i>P. superciliosus</i>
Varied sittella	<i>Daphoenositta chrysoptera</i>
Crested shrike-tit	<i>Falcunculus cristata</i>
Crested bellbird	<i>Oreoica gutturalis</i>
Rufous whistler	<i>Pachycephala rufiventris</i>
Restless flycatcher	<i>Myiagra inquieta</i>
White-browed woodswallow	<i>Artamus superciliosus</i>
Dusky woodswallow	<i>A. cyanopterus</i>
Diamond firetail	<i>Stagonopleura guttata</i>

(C) **Rare and threatened birds of the Brigalow Belt Ecoregion, Queensland, after the *Nature Conservation (Wildlife) Regulation 1994*.**

Common name	Scientific name	Conservation status	Entire BBE (Young et al. 1999)	Condamine Catchment (CCMA 2001)
Paradise parrot	<i>Psephotus pulcherrimus</i>	PE	☞	☞
Red goshawk	<i>Erythrotriorchis radiatus</i>	E	☞	
Star finch	<i>Neochmia ruficauda</i>	E	☞	
Regent honeyeater	<i>Xanthomyza phrygia</i>	E	☞	☞
Pink cockatoo	<i>Cacatua leadbeateri</i>	V	☞	
Glossy black-cockatoo	<i>Calyptorhynchus lathami</i>	V	☞	☞
Yellow chat	<i>Ephthianura crocea</i>	V	☞	
Grey falcon	<i>Falco hypoleucos</i>	V	☞	
Squatter pigeon (southern subsp.)	<i>Geophaps scripta scripta</i>	V	☞	
Crimson finch	<i>Neochmia phaeton</i>	V	☞	
Powerful owl	<i>Ninox strenua</i>	V	☞	
Plains-wanderer	<i>Pedionomus torquatus</i>	V	☞	
Black-throated finch	<i>Poephila cincta cincta</i>	V	☞	
Black-breasted button-quail	<i>Turnix melanogaster</i>	V	☞	☞
Grey goshawk	<i>Accipiter novaehollandiae</i>	R	☞	
Chestnut teal	<i>Anas castanea</i>	R	☞	
Ground cuckoo-shrike	<i>Coracina maxima</i>	R	☞	
Lewin's rail	<i>Rallus pectoralis</i>	R	☞	
Black-necked stork	<i>Ephippiorhynchus asiaticus</i>	R	☞	☞
Painted honeyeater	<i>Grantiella picta</i>	R	☞	
Yellow-tufted honeyeater	<i>Lichenostomus melanops</i>	R	☞	
Square-tailed kite	<i>Lophoictinia isura</i>	R	☞	
Black-chinned honeyeater	<i>Melithreptus gularis</i>	R	☞	
Turquoise parrot	<i>Neophema pulchella</i>	R	☞	
Cotton pygmy-goose	<i>Nettapus coromandelianus</i>	R	☞	
Great crested grebe	<i>Podiceps cristatus</i>	R	☞	
Painted snipe	<i>Rostratula benghalensis</i>	R	☞	
Freckled duck	<i>Stictonetta naevosa</i>	R	☞	☞
Radjah shelduck	<i>Tadorna radjah</i>	R	☞	

E = Endangered
V = Vulnerable
PE = Presumed Extinct
R = Rare

Appendix 5. Threatened reptiles of NSW and Queensland cotton growing areas.

(A) Reptile species listed as threatened and being of conservation concern in NSW cotton growing areas.

Common name	Scientific name	Conservation status	BBSE (NSW NPWS 2002a, c)	DRPE (Kearle et al. 2002)
Pale-headed snake	<i>Hoplocephalus bitorquatus</i>	V	☠	☠
Five-clawed skink	<i>Anomalopul mackayi</i>	E	☠	☠
Western blue-tongued lizard	<i>Tiliqua occipitalis</i>	V		☠
Woma	<i>Aspidites ramsayi</i>	V		☠
Stimson's python	<i>Liasis stimsoni</i>	V		☠
Fierce snake	<i>Oxyuranus microlepidotus</i>	E4		☠
Broad-shelled river turtle	<i>Chelodina expansa</i>	R/IKCCSE, RSP		☠
Eastern snake-necked turtle	<i>Chelodina longicollis</i>	R/IKCCSE, IK/VWDSP		☠
Ocellated velvet gecko	<i>Oedura monilis</i>	RWDSP		☠
Gibber earless dragon	<i>Tympanocryptis intima</i>	RSP		☠
Skink	<i>Ctenotus ingrami</i>	RSP		☠
Skink	<i>Ctenotus strauchii</i>	Subsp varius RSP		☠
Skink	<i>Egernia modesta</i>	RWDSP		☠
Eastern water skink	<i>Eulamprus quoyii</i>	RWDSP		☠
Skink	<i>Lerista xanthura</i>	DPWDSP		☠
Skink	<i>Proablepharus kinghorni</i>	RSP		☠
Blind snake	<i>Ramphotyphlops proximus</i>	RWDSP		☠
Carpet python	<i>Morelia spilota variegata</i>	IK/EWDSP		☠
Green tree snake	<i>Dendrelaphis punctulata</i>	RWDSP		☠
Common death adder	<i>Acanthophis antarcticus</i>	R/IKCCSE, RWDSP		☠
	<i>Denisonia maculata</i>	VCCSE		☠
Eastern tiger snake	<i>Notechis scutatus</i>	RWDSP		☠
Spotted black snake	<i>Pseudechis guttatus</i>	RWDSP		☠
Red-bellied black snake	<i>Pseudechis porphyriacus</i>	RWDSP		☠
Ringed brown snake	<i>Pseudonaja nuchalis</i>	RSP		☠
Black-headed snake	<i>Suta spectabilis</i>	RSP		☠
Bandy bandy	<i>Vermicella annulata</i>	R/IKCCSE		☠

E = listed as Endangered under the NSW *Threatened Species Conservation Act 1995*

V = listed as Vulnerable under the NSW *Threatened Species Conservation Act 1995*

E4 = listed as extinct under the NSW *Threatened Species Conservation Act 1995*

R/IKCCSE = rare or insufficiently known as defined by Cogger et al. 1993

VCCSE = vulnerable as defined by Cogger et al. 1993

RSP = rare in NSW as defined by Sadler and Pressey 1994

IK/RSP = insufficiently known (possibly rare) in NSW as defined by Sadler and Pressey 1994

RWDSP = rare in the western division of NSW as defined by Sadler and Pressey 1994

DPWDSP = disjunct population in the western division of NSW as defined by Sadler and Pressey 1994

IK/EWDSP = insufficiently known (possibly endangered) in the western division of NSW as defined by Sadler and Pressey 1994

IK/VWDSP = insufficiently known (possibly vulnerable) in the western division of NSW as defined by Sadler and Pressey 1994

(B) Rare and threatened reptiles of the BBE based on the *Nature Conservation (Wildlife) Regulation 1994* (Adapted from Young et al. (1999) with records from Eyre et al. (2001) and Hines et al. (2000)).

Scientific name	Common name	Conservation status	Distribution status
<i>Lerista allanae</i>	skink	E	+
<i>Anomalopus mackayi</i>	skink	V	+
<i>Delma labialis</i>	legless lizard	V	+
<i>Delma torquata</i>	legless lizard	V	+
<i>Egernia rugosa</i>	yakka skink	V	+
<i>Furina dunmalli</i>	Dunmall's snake	V	+
<i>Lerista vittata</i>	skink	V	+
<i>Paradelma orientalis</i>	Brigalow scaly-foot	V	+
<i>Rheodytes leukops</i>	Fitzroy tortoise	V	+
<i>Acanthophis antarcticus</i>	common death adder	R	+
<i>Anomalopus brevicollis</i>	skink	R	+
<i>Coeranoscincus frontalis</i>	skink	R	+
<i>Diplodactylus taenicauda</i>	golden-tailed gecko	R	+
<i>Furina barnardi</i>	yellow-naped snake	R	+
<i>Lampropholis mirabilis</i>	skink	R	+
<i>Lerista cinerea</i>	skink	R	?
<i>Lerista karlschmidti</i>	skink	R	+
<i>Menetia sadleri</i>	skink	R	+
<i>Ramphotyphlops broomi</i>	blind snake	R	?
<i>Simoselaps warro</i>	snake	R	+

PE = Presumed extinct

E = Endangered

V = Vulnerable

R = Rare

+ = Definite record

? = Species occurrence listed as possible because (a) point location close to boundary between two or more ecoregions, or (b) presence, especially of presumed extinct species, inferred from broad distribution maps of current reference books

Appendix 6. Freshwater fish recorded in NSW and Queensland cotton growing areas.

(A) Fish recorded in NSW cotton growing ecoregions (source Harris and Gehrke, 1997, Llewellyn 1983) in (Kearle et al. 2002, NSW NPWS 2002a).

Common name	Species name	Status	Rivers in Brigalow Belt South Ecoregion	Rivers in Darling Riverine Plains Ecoregion
Murray hardyhead	<i>Craterocephalus fluviatilis</i>	E	Namoi, Macquarie	Namoi, Macquarie
Silver perch	<i>Bidyanus bidyanus</i>	V	Namoi, Gwydir, Macquarie	Gwydir, Namoi, Macquarie, Darling, Barwon-Darling
Olive perchlet	<i>Ambassis agassizii</i>	CC1	Macquarie	Macquarie
Flathead gudgeon	<i>Philypnodon grandiceps</i>	CC1	Macquarie	Macquarie
River blackfish (possibly only in headwaters)	<i>Gadopsis marmoratus</i>	CC2	Namoi, Gwydir, Macquarie	Gwydir, Namoi, Macquarie
Murray cod	<i>Maccullochella peelii</i>	CC3	Namoi, Gwydir, Macquarie	Gwydir, Namoi, Macquarie, Darling, Barwon-Darling
Freshwater catfish	<i>Tandanus tandanus</i>	CC4	Namoi, Gwydir, Macquarie	Gwydir, Namoi, Macquarie, Barwon-Darling
Flyspecked hardyhead	<i>Craterocephalus stercusmuscarum</i>	Native	Namoi	Namoi, Barwon-Darling
Mountain galaxias (possibly only in headwaters)	<i>Galaxias olidus</i>	Native	Gwydir, Macquarie	Gwydir, Namoi, Macquarie, Barwon-Darling
Darling River hardyhead	<i>Craterocephalus amniculus</i>	Native		Barwon-Darling
Dwarf flathead gudgeon	<i>Philypnodon</i> sp.	Native		Barwon-Darling
Gudgeon	<i>Hypseleotris</i> spp	Native	Namoi, Gwydir, Macquarie	Gwydir, Namoi, Macquarie, Darling
Western carp gudgeon	<i>Hypseleotris klunzingeri</i>	Native		Barwon-Darling
Lake's carp gudgeon	<i>Hypseleotris</i> sp1	Native		Barwon-Darling
Midgley's carp gudgeon	<i>Hypseleotris</i> sp2	Native		Barwon-Darling
Northern purple-spotted gudgeon	<i>Mogurnda mogurnda</i>	Native		Barwon-Darling
Spangled perch	<i>Leiopotherapon unicolor</i>	Native	Namoi, Gwydir, Macquarie	Gwydir, Namoi, Macquarie, Darling, Barwon-Darling
Golden perch	<i>Macquaria ambigua</i>	Native	Namoi, Gwydir, Macquarie	Gwydir, Namoi, Macquarie, Darling, Barwon-Darling
Crimson-spotted rainbowfish	<i>Melanotaenia fluviatilis</i>	Native	Namoi, Gwydir, Macquarie	Gwydir, Namoi, Macquarie, Darling,

				Barwon-Darling
Bony herring	<i>Nematalosa erebi</i>	Native	Namoi, Gwydir, Macquarie	Gwydir, Namoi, Macquarie, Darling, Barwon-Darling
Australian smelt	<i>Retropinna semoni</i>	Native	Namoi, Gwydir, Macquarie	Gwydir, Namoi, Macquarie, Darling, Barwon-Darling
Rainbow trout	<i>Oncorhynchus mykiss</i>	Feral	Macquarie	
Brown trout	<i>Salmo trutta</i>	Feral	Macquarie	
Brook trout	<i>Salvelinus fontinalis</i>	Feral	Macquarie	
Redfin perch	<i>Perca fluviatilis</i>	Feral	Gwydir, Macquarie	
Gold fish	<i>Carassius auratus</i>	Feral	Namoi, Gwydir, Macquarie	
Common carp	<i>Cyprinus carpio</i>	Feral	Namoi, Gwydir, Macquarie	
Mosquito fish	<i>Gambusia holbrooki</i>	Feral	Namoi, Gwydir, Macquarie	

E = listed as endangered under the NSW *Fisheries Management Act 1994*

V = listed as vulnerable under the NSW *Fisheries Management Act 1994*

CC1 = of conservation concern due to reduced distribution and abundance inland

CC2 = of conservation concern due to susceptibility to increased sediment load

CC3 = of conservation concern due to reduced and fragmented distribution

CC4 = of conservation concern due to scarcity in many inland habitats

(B) Freshwater fish recorded in cotton growing catchments in the Brigalow Belt Ecoregion in Queensland (McFarland et al. 1999) (Note: no species are listed under the *Nature Conservation (Wildlife Regulation) 1994*).

Common Name	Scientific Name	Fitzroy River Catchment	Maranoa/Balonne/Condamine Catchments	Barwon/Dumaresq/Moonie Catchments (includes parts of other ecoregions)
Oxeye herring	<i>Megalops cyprinoides</i>	☞		
South Pacific eel	<i>Anguilla obscura</i>	☞		
Long-finned eel	<i>Anguilla reinhardtii</i>	☞		
Bony bream	<i>Nematalosa erebi</i>	☞	☞	☞
Southern saratoga	<i>Scleropages leichardti</i>	☞		
Australian smelt	<i>Retropinna semoni</i>		☞	☞
Mountain galaxis	<i>Galaxias olidus</i>		☞	☞
Lesser salmon catfish	<i>Arius graeffei</i>	☞		
Hyrtl's tandan	<i>Neosilurus hyrtlii</i>	☞		
Rendahl's catfish	<i>Porochilus rendahli</i>	☞		
Eel-tailed catfish	<i>Tandanus tandanus</i>	☞	☞	
Snub-nosed garfish	<i>Arrhamphus sclerolepis</i>	☞		
Long tom	<i>Strongylura krefftii</i>	☞		
Fly-specked hardyhead	<i>Craterocephalus stercusmuscarum</i>	☞	☞	☞
Crimson-spotted rainbowfish	<i>Melanotaenia fluviatilis</i>		☞	
Australian rainbowfish	<i>Melanotaenia splendida</i>	☞		
Ornate rainbowfish	<i>Rhadinocentrus ornatus</i>	☞		
Pacific blue-eye	<i>Pseudomugil signifer</i>	☞		
Barramundi	<i>Lates calcarifer</i>	☞		
Agassiz's perchlet	<i>Ambassis agassizii</i>	☞	☞	☞

Murray cod	<i>Maccullochella peeli</i>		♂	
Yellowbelly	<i>Macquaria ambigua</i>	♂	♂	♂
Banded grunter	<i>Amniataba percoides</i>	♂		
Silver perch	<i>Bidyanus bidyanus</i>		♂	♂
Sooty grunter	<i>Hephaestus fuliginosus</i>	♂		
Spangled perch	<i>Leiopotherapon unicolor</i>	♂	♂	♂
Leathery grunter	<i>Scortum hilli</i>	♂		
Mouth almighty	<i>Glossamia aprion</i>	♂		
River blackfish	<i>Gadopsis marmoratus</i>		♂	♂
Sea mullet	<i>Mugil cephalus</i>	♂		
Freshwater mullet	<i>Myxus petardi</i>	♂		
Empire gudgeon	<i>Hypseleotris compressa</i>	♂		
Firetail gudgeon	<i>Hypseleotris galii</i>	♂		
Western carp gudgeon	<i>Hypseleotris klunzingeri</i>		♂	
Midgley's carp gudgeon	<i>Hypseleotris sp B</i>		♂	♂
Southern purple-spotted	<i>Mogurnda adspersa</i>	♂	♂	
Sleepy cod	<i>Oxyeleotris lineolatus</i>	♂		
Big-headed gudgeon	<i>Philypnodon grandiceps</i>	♂		
Goldfish	<i>Carassius auratus</i>	♂	♂	
European carp	<i>Cyprinus carpio</i>			♂
Mosquitofish	<i>Gambusia affinis</i>	♂	♂	

Appendix 7. Threatened vascular plants of NSW and Queensland cotton growing areas.

(A) **Threatened (under the *Threatened Species Conservation Act 1995*) and Rare or Threatened Australian Plants (ROTAP) in the Brigalow Belt South Ecoregion NSW (McCauley et al. 2002, NSW NPWS 2002a) (Note that this list includes species from a 15 km buffer zone around the BBSE. Species identified as not occurring in the BBSE by John Hunter are highlighted with an asterix).**

Family	Common name	Scientific name	Status
Araliaceae		<i>Astrotricha roddii</i>	E
Capparaceae		<i>Capparis loranthifolia</i> var. <i>loranthifolia</i>	E
Orchidaceae		<i>Diuris pedunculata</i>	E
Haloragaceae		<i>Haloragis stricta</i>	E
Euphorbiaceae		<i>Phyllanthus maderaspatensis</i>	E
Platyzomataceae		<i>Platyzoma microphyllum</i>	E
Fabaceae		<i>Swainsona recta</i>	E
Platyzomataceae		<i>Platyzoma microphyllum</i>	E
Sterculiaceae		<i>Rulingia procumbens</i>	V
Rhamnaceae		<i>Pomaderris queenslandica</i>	E
Euphorbiaceae		<i>Bertya</i> sp. Coolabah-Cobar	V
Euphorbiaceae		<i>Monotaxis macrophylla</i>	E
Brassicaceae	spiny peppergrass	<i>Lepidium aschersonii</i>	V
Brassicaceae		<i>Lepidium hyssopifolium</i>	E
Brassicaceae	winged peppergrass	<i>Lepidium monolocoides</i>	E
Myrtaceae		<i>Homoranthus darwiniioides</i>	V
Myrtaceae		* <i>Homoranthus prolixus</i>	V
Rutaceae		<i>Boronia granitica</i>	E
Rubiaceae		<i>Asperula asthenes</i>	V
Fabaceae		<i>Kennedia retrorsa</i>	V
Sterculiaceae		<i>Lasiopetalum longistamineum</i>	V
Asteraceae		<i>Ozothamnus tessellatus</i>	V
Proteaceae		<i>Persoonia marginata</i>	V
Asteraceae		<i>Picris evae</i>	V
Lamiaceae		<i>Prostanthera cineolifera</i>	V
Lamiaceae		<i>Prostanthera discolor</i>	V
Fabaceae		<i>Swainsona sericea</i>	V
Rutaceae		<i>Philothea ericifolia</i>	V
Rutaceae		<i>Zieria ingramii</i>	E
Surianaceae	ooline	<i>Cadellia pentastylis</i>	V
Mimosaceae		<i>Acacia jucunda</i>	E
Fabaceae	creeping tick-trefoil	<i>Desmodium campylocaulon</i>	E
Fabaceae		<i>Indigofera efoliata</i>	E
Fabaceae		<i>Pultenaea pedunculata</i>	E
Fabaceae	slender darling pea	<i>Swainsona murrayana</i>	V
Polygalaceae		* <i>Polygala linariifolia</i>	E
Santalaceae		<i>Thesium australe</i>	V
Asteraceae		<i>Calotis glandulosa</i> (northern extent of range)	V
Goodeniaceae		<i>Goodenia macbarronii</i>	V
Asclepiadaceae		<i>Cynanchum elegans</i>	E
Asclepiadaceae		<i>Tylophora linearis</i>	E
Lamiaceae		<i>Prostanthera cryptandroides</i>	V
Orchidaceae		<i>Diurus tricolor</i>	V
Orchidaceae		<i>Pterostylis cobarensis</i> (eastern extent of range)	V
Cyperaceae		<i>Cyperus conicus</i>	E
Poaceae		<i>Bothriochloa biloba</i>	V

Poaceae	bluegrass	<i>Dichanthium setosum</i>	V
Poaceae	finger panic grass	<i>Digitaria porrecta</i>	E
Scrophulariaceae		<i>Euphrasia collina</i>	2EC-
Myrtaceae		<i>Eucalyptus conjuncta</i>	2K
Poaceae	porcupine greass	<i>Triodia scariosa</i>	2K
Proteaceae		<i>Persoonia terminalis</i> subsp <i>recurva</i>	3R
Proteaceae		<i>Grevillea johnsonii</i>	2RCi
Dilleniaceae		* <i>Hibbertia kaputarensis</i>	2RC-
Thymelaeaceae		<i>Pimelea ciliolaris</i>	2RC-
Rutaceae	scaly phebalium	* <i>Phebalium squamulosum</i>	2RC-
Rutaceae		<i>Asterolasia hexapetala</i>	2RC-
Fabaceae		<i>Acacia forsythii</i>	2RC-
Lamiaceae		<i>Prostanthera cruciflora</i>	2RC-t
Mimosaceae		<i>Acacia dangarensis</i>	2RC-t
Rutaceae		* <i>Boronia rubiginosa</i>	2RCa
Myrtaceae		<i>Homoranthus cernuus</i>	2RCa
Lamiaceae		<i>Westringia glabra</i> (western extent of range)	2RC-
Rutaceae	desert phebalium	* <i>Phebalium glandulosum</i>	2VCi
Proteaceae		<i>Persoonia cuspidifera</i>	3K
Fabaceae		<i>Isotropis foliosa</i>	3KC-
Asteraceae		<i>Ozothamnus adnatus</i>	3KC-
Asteraceae		* <i>Olearia gravis</i>	3KC-
Asteraceae		<i>Picris evae</i>	3KC-
Myrtaceae		* <i>Eucalyptus elliptica</i>	3KC-
Fabaceae		<i>Isotropis foliosa</i>	3KC-
Sapindaceae		<i>Dodonaea macrossanii</i>	3R
Poaceae		<i>Homopholis belsonii</i>	3R
Myrtaceae		<i>Callistemon shiressii</i> (western extent of range)	3RC-
Rutaceae		<i>Eriostemon ericifolius</i>	3RC-
Asteraceae		<i>Senecio macranthus</i>	3RC-
Scrophulariaceae		* <i>Derwentia arenaria</i>	3RC-
Orchidaceae		<i>Prasophyllum campestre</i>	3RC-
Orchidaceae		<i>Pterostylis longicurva</i>	3RC-
Orchidaceae	long-tailed greenhood	<i>Pterostylis woollsii</i>	3RC-
Cyperaceae		<i>Eleocharis blakeana</i>	3RC-
Rutaceae		<i>Philotheca ericifolia</i> (<i>Eriostemon ericifolius</i>)	3RC-
Rhamnaceae		<i>Pomaderris pauciflora</i>	3RC-
Rutaceae		<i>Eriostemon myoporoides</i> subsp. <i>epilosus</i>	3RC-
Scrophulariaceae		<i>Euphrasia orthocheila</i>	3RC-
Haloragaceae		<i>Gonocarpus longifolius</i>	3RC-
Rhamnaceae	Australian anchor plant	* <i>Discaria pubescens</i>	3RCa
Euphorbiaceae		<i>Pseudanthus divaricatissimum</i>	3RCa
Myrtaceae		* <i>Eucalyptus nandewarica</i>	3RCa
Rutaceae	club-leaved phebalium	* <i>Phebalium obcordatum</i>	3RCa
Rutaceae		* <i>Phebalium viridiflorum</i>	3RCa
Sapindaceae		* <i>Dodonaea rhombifolia</i>	3RCa
Fabaceae		<i>Acacia barringtonensis</i> (western extent of range)	3RCa
Asteraceae		<i>Brachyscome gracilis</i>	3RCa
Rubiaceae		<i>Asperula charophyton</i>	3RCa

Lomandraceae		<i>Lomandra patens</i>	3RCa
Rutaceae		<i>Leionema viridiflorum</i> (<i>Phebalium viridiflorum</i>)	3RCa
Sterculiaceae		<i>Rulingia hermanniifolia</i>	3RCa
Mimosaceae		<i>Acacia ausfeldii</i>	3RCa
Rutaceae		* <i>Zieria odorifera</i>	3RCi
Adiantaceae	common maidenhair	<i>Adiantum aethiopicum</i>	P13
Adiantaceae	giant maidenhair	<i>Adiantum formosum</i>	P13
Adiantaceae	rough maidenhair	<i>Adiantum hispidulum</i>	P13
Cyatheaceae	rough treefern	<i>Cyathea australis</i>	P13
Casuarinaceae	river oak	<i>Casuarina cunninghamiana</i> ssp <i>cunninghamiana</i>	P13
Proteaceae		<i>Xylomelum cunninghamianum</i>	P13
Proteaceae		<i>Xylomelum pyriforme</i>	P13
Rutaceae		* <i>Boronia anethifolia</i>	P13
Rutaceae		* <i>Boronia bipinnata</i>	P13
Rutaceae		* <i>Boronia glabra</i>	P13
Rutaceae	Sydney boronia	* <i>Boronia ledifolia</i>	P13
Rutaceae	small-leaved boronia	* <i>Boronia microphylla</i>	P13
Rutaceae		<i>Boronia warrumbunglensis</i>	P13
Rutaceae		* <i>Philotheca myoporoides</i> ssp <i>epilosus</i> (western extent of range)	P13
Apiaceae	flannel flower	<i>Actinotus helianthi</i>	P13
Orchidaceae	tiger orchid	<i>Cymbidium canaliculatum</i>	P13
Orchidaceae	hyacinth orchid	<i>Dipodium hamiltonianum</i>	P13
Orchidaceae	hyacinth orchid	* <i>Dipodium punctatum</i>	P13
Orchidaceae	hyacinth orchid	<i>Dipodium roseum</i>	P13
Orchidaceae	rock lily	<i>Dendrobium speciosum</i>	P13

E (on its own) = listed as Endangered under the NSW *Threatened Species Conservation Act 1995*

V (on its own) = listed as Vulnerable under the NSW *Threatened Species Conservation Act 1995*

Distribution

1 = The taxon is known from only one collection

2 = The geographic range of the taxon in Australia is less than 100 km

3 = The geographic range of the taxon in Australia is greater than 100 km

Conservation Status under Rare or Threatened Plant Codes

E = Endangered

V = Vulnerable

R = Rare

K = Poorly known

Reservation status and size class of all reserved populations

C = Reserved

a = 1000 plants or more are known to occur within a conservation reserve(s)

i = Less than 1000 plants are known to occur within a conservation reserve(s)

- = Reserved population size is not accurately known

t = Total known population reserved

P13 = Protected under the NSW *National Parks and Wildlife Act 1974*

(B) Threatened species listed under the *Threatened Species Conservation Act 1995* in the Darling Riverine Plains Ecoregion (Kearle et al. 2002).

Family	Common name	Scientific name	Status
Brassicaceae	Winged peppergrass	<i>Lepidium monophlooides</i>	E
Capparaceae		<i>Capparis loranthifolia</i> var <i>loranthifolia</i>	E
Fabaceae (Faboideae)	Creeping tick-trefoil	<i>Desmodium campylocaulon</i>	E
Fabaceae (Faboideae)		<i>Indigofera leucotricha</i>	E
Convolvulaceae		<i>Ipomoea diamantina</i>	E
Euphorbiaceae		<i>Phyllanthus maderaspatensis</i>	E
Thymelaeaceae		<i>Pimelea elongata</i>	E
Malvaceae		<i>Sida rohlenae</i>	E
Fabaceae (Faboideae)		<i>Swainsona adenophylla</i>	E
Solanaceae		<i>Solanum karsense</i>	V
Surianaceae		<i>Cadellia pentastylis</i>	V
Poaceae		<i>Bothriochloa biloba</i>	V
Sterculiaceae		<i>Rulingia procumbens</i>	V
Haloragaceae		<i>Haloragis exalata</i>	V
Fabaceae (Mimosoideae)	Needle wattle	<i>Acacia carneorum</i>	V
Fabaceae (Faboideae)		<i>Swainsona plagiotropis</i>	V
Goodeniaceae		<i>Goodenia macbarronii</i>	V
Fabaceae (Faboideae)		<i>Swainsona murrayana</i>	V
Poaceae		<i>Echinochloa lacunaria</i>	2K
Apiaceae		<i>Actinotus paddisonii</i>	3K
Chenopodiaceae		<i>Atriplex morrisii</i>	3K
Proteaceae		<i>Persoonia cuspidifera</i>	3K
Chenopodiaceae		<i>Sclerolaena blackiana</i>	3K
Rutaceae		<i>Philothea ericifolia</i>	3RC-
Lomandraceae		<i>Lomandra patens</i>	3RCa
Rutaceae	club-leaved phebalium	<i>Phebalium obcordatum</i>	3RCa
Rutaceae		<i>Boronia rubiginosa</i>	P13 (2RCa)
Casuarinaceae	river sheoak	<i>Casuarina cunninghamiana</i> ssp <i>cunninghamiana</i>	P13
Orchidaceae	tiger orchid	<i>Cymbidium canaliculatum</i>	P13
Fabaceae (Faboideae)	Sturt's desert pea	<i>Swainsona formosa</i>	P13
Plant species of concern known from historical records but with no recent records			
Adiantaceae		<i>Cheilanthes sieberi</i> ssp <i>pseudovellea</i>	E
Chenopodiaceae		<i>Atriplex infrequens</i>	V
Myrtaceae		<i>Thryptomene hexandra</i>	3RC-
Rutaceae		<i>Zieria granulata</i>	E
Fabaceae (Faboideae)		<i>Indigofera efoliata</i>	2E
Fabaceae (Faboideae)		<i>Swainsona murrayana</i>	V
Fabaceae (Faboideae)		<i>Swainsona recta</i>	E
Eriocaulaceae		<i>Eriocaulon carsonii</i>	E
Cyperaceae		<i>Cyperus conicus</i>	E

Poaceae		<i>Dichanthium setosum</i>	V
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i = Less than 1000 plants are known to occur within a conservation reserve(s)

- = Reserved population size is not accurately known

t = Total known population reserved

P13 = Protected under the NSW *National Parks and Wildlife Act 1974*

(C) **Rare and threatened flora of the entire Brigalow Belt Ecoregion in Queensland after the *Nature Conservation (Wildlife) Regulation 1994* (Young et al. 1999).**

Scientific name	Common name	Conservation status	Distribution status
<i>Acacia porcata</i>		E	N
<i>Atalaya collina</i>		E	N
<i>Bertya</i> sp. (Beeron P.I. Forster +PIF5753)		E	N
<i>Cossinia australiana</i> (Cania Gorge NP)		E	K
<i>Decaspermum</i> sp. (Mt Morgan N. Hoy AQ455657))		E	N
<i>Digitaria porrecta</i>	branched finger panic	E	N
<i>Homophollis belsonii</i>	Belson's couch	E	N
<i>Leucopogon confertus</i>		E	N
<i>Macrozamia platyrhachis</i> (Blackdown Tableland NP)		E	K
<i>Rutidosis lanata</i>		E	N
<i>Solanum paparvofloium</i>		E	
<i>Tectaria devexa</i> (Mt Etna Caves)		E	K
<i>Tylophora linearis</i>		E	N
<i>Xerothamnella herbacea</i>		E	N
<i>Acacia chinchillensis</i>		V	N
<i>Acacia curranii</i>		V	N
<i>Acacia deuteroneura</i>		V	N
<i>Acacia eremophiloides</i>		V	N
<i>Acacia grandifolia</i>		V	N
<i>Acacia handonis</i>		V	N
<i>Acacia lauta</i>		V	N
<i>Acacia wardellii</i>		V	N
<i>Aristida annua</i>		V	N
<i>Bertya</i> sp. (Winneba D. Jermyn 31)		V	N
<i>Bothriochloa biloba</i>		V	N
<i>Cadellia pentastylis</i> (Carnarvon NP, Sundown NP)		V	K
<i>Calytrix gurlmundensis</i>		V	N
<i>Capparis thozetiana</i>		V	N
<i>Commersonia</i> sp. (Cadarga G. P. Guymer 1642)		V	N
<i>Corymbia xanthope</i>		V	N
<i>Croton magneticus</i> (Magnetic Island NP)		V	K
<i>Cycas ophiolitica</i>		V	N
<i>Cyperus clarus</i>		V	
<i>Daviesia discolor</i> (Blackdown Tableland NP)		V	K
<i>Denhamia parvifolia</i>		V	N
<i>Dichanthium queenslandicum</i>		V	N
<i>Dichelachne parva</i>		V	N
<i>Eriostemon sporadicus</i>		V	N
<i>Eucalyptus argophloia</i>		V	N
<i>Eucalyptus beaniana</i> (Isla Gorge NP)		V	K

<i>Eucalyptus infera</i>		V	N
<i>Eucalyptus paedoglauca</i>		V	N
<i>Eucalyptus raveretiana</i> (Goodedulla NP)		V	K
<i>Eucalyptus virens</i> (Coolmunda CP) (<1000 ha)		V	K
<i>Fontainea</i> sp. (Binjour P. I. Forester PIF4687), Gurgeena CP) (<1000 ha)		V	K
<i>Marsdenia brevifolia</i>		V	N
<i>Homoranthus decumbens</i> (Blackdown Tableland NP)		V	K
<i>Leucopogon cuspidatus</i>		V	N
<i>Livistona drudei</i> (Mt Archer NP, Magnetic Island NP)		V	K
<i>Logania diffusa</i> (Blackdown Tableland NP)		V	K
<i>Macrozamia contorta</i>		V	N
<i>Macrozamia cranei</i>		V	N
<i>Macrozamia crassifolia</i>		V	N
<i>Macrozamia fearnsidei</i>		V	N
<i>Macrozamia machinii</i>		V	N
<i>Neoroepora buxifolia</i>		V	N
<i>Newcastelia velutina</i>		V	N
<i>Picris evae</i>	hawk weed	V	N
<i>Pimelea leptospermoides</i>		V	N
<i>Pomaderris clivicola</i>		V	N
<i>Prostanthera</i> sp. (Dunmore D. M. Gordon 8A)		V	N
<i>Pultenaea setulosa</i>		V	N
<i>Rhaphidospora bonneyana</i>		V	N
<i>Stemmacantha australis</i>	Australian cornflower	V	N
<i>Thesium australe</i>	Austral toadflax	V	N
<i>Trymalium minutiflorum</i>		V	N
<i>Westringia parvifolia</i>		V	N
<i>Zieria collina</i> (Palmgrove NP)		V	K
<i>Zieria</i> sp. (Monogorilby P. I. Forster PIF1004)		V	N
<i>Acacia calantha</i>		R	N
<i>Acacia gittinsii</i> (Blackdown Tableland NP)		R	K
<i>Acacia gnidium</i> (Isla Gorge NP)		R	K
<i>Acacia hockingsii</i> (Isla Gorge NP)		R	K
<i>Acacia holotricha</i>		R	N
<i>Acacia island</i> (Isla Gorge NP)		R	K
<i>Acacia jackesiana</i> (Magnetic Island NP)		R	K
<i>Acacia longipedunculata</i>		R	N
<i>Acacia pedleyi</i>		R	N
<i>Acacia pubicosta</i> (Blackdown Tableland NP)		R	K
<i>Acacia spania</i>		R	N
<i>Acacia storyi</i> (Blackdown Tableland NP)		R	K
<i>Acacia tenuinervis</i>		R	N

<i>Actephila sessilifolia</i> (Bowling Green Bay NP)		R	K
<i>Actinotus paddisonii</i>		R	N
<i>Angianthus brachypappus</i>		R	N
<i>Aponogeton queenslandicus</i>		R	N
<i>Atalaya calcicola</i>		R	N
<i>Bertya pedicellata</i> (Carnarvon NP)		R	K
<i>Beyeria</i> sp. (Bull Creek Gorge B. O'Keeffe 573) (Carnarvon NP)		R	K
<i>Blechnum ambiguum</i> (Blackdown Tableland NP)		R	K
<i>Bonamia dietrichiana</i> (Magnetic Island NP)		R	K
<i>Boronia eriantha</i> (Carnarvon NP)		R	K
<i>Callicarpa thozetii</i>		R	N
<i>Callistemon chisholmii</i> (Zamia Creek NP)		R	K
<i>Callistemon pearsonii</i> (Blackdown Tableland NP)		R	K
<i>Calocephalus sonderi</i>		R	N
<i>Calytrix islensis</i> (Isla Gorge NP)		R	K
<i>Cassia</i> sp. (Paluma Range G. Sankowsky +450) (Magnetic Island NP)		R	K
<i>Cerbera dumicola</i>		R	N
<i>Corymbia petalophylla</i>		R	N
<i>Corymbia scabrada</i>		R	N
<i>Desmodium macrocarpum</i>		R	N
<i>Dichanthium setosum</i> (Carnarvon NP, Taunton NP)		R	K
<i>Discaria pubescens</i>	hairy anchor plant	R	
<i>Dodonaea biloba</i>		R	N?
<i>Dodonaea macrossanii</i>		R	N
<i>Eleocharis blakeana</i> (Lake Broadwater CP)		R	K
<i>Eucalyptus curtisii</i> (Isla Gorge NP, Expedition NP)		R	K
<i>Eucalyptus melanoleuca</i> (Zamia Creek NP (<1000 ha), Blackdown Tableland NP)		R	K
<i>Eucalyptus pachycalyx</i>		R	N
<i>Eucalyptus rubiginosa</i> (Isla Gorge NP)		R	K
<i>Eucalyptus siclifolia</i> (Zamia Creek NP) (<1000 ha)		R	K
<i>Eucalyptus sphaerocarpa</i> (Blackdown Tableland NP)		R	K
<i>Fimbristylis vagans</i> (Lake Broadwater CP)		R	K
<i>Frankenia scabra</i>		R	N
<i>Genoplesium pedersonii</i> (Blackdown Tableland NP)		R	K
<i>Genoplesium validum</i>		R	K

(Blackdown Tableland NP)			
<i>Goodenia viridula</i>		R	N
<i>Gossypium sturtianum</i>		R	N
<i>Graptophyllum excelsum</i>		R	N
<i>Grevillea cyranostigma</i> (Carnavon NP)		R	K
<i>Homoranthus decasetus</i> (Isla Gorge NP)		R	K
<i>Homoranthus melanostictus</i>		R	N
<i>Homoranthus zeteticorum</i> (Chesterton Range NP)		R	K
<i>Indigofera bailey</i>		R	N
<i>Leptospermum venustum</i>		R	N
<i>Leucopogon grandiflorus</i> (Carnavon NP)		R	K
<i>Livistona</i> sp. (Blackdown Tableland NP)		R	K
<i>Logania cordifolia</i> (Carnavon NP)		R	K
<i>Lomandra teres</i> (Carnavon NP)		R	K
<i>Lysiana filifolia</i> (Blackdown Tableland NP)		R	K
<i>Macarthuria ephedroides</i> (Blackdown Tableland NP)		R	K
<i>Macropteranthes leiocaulis</i> (Gurgeena CP, Goodedulla NP)		R	K
<i>Melaleuca groveana</i> (Blackdown Tableland NP)		R	K
<i>Notelaea pungens</i>		R	N
<i>Peripleura scabra</i> (Magnetic Island NP)		R	K
<i>Peripleura sericea</i>		R	N
<i>Plectranthus blakei</i> (Blackdown Tableland NP)		R	K
<i>Prasopphyllum campestre</i>		R	N
<i>Pterostylis longicurva</i>		R	N
<i>Pterostylis woollsii</i> (Blackdown Tableland NP)		R	K
<i>Rutidosis</i> sp. (Blackdown Tableland NP)		R	N
<i>Stackhousia tryonii</i>		R	N
<i>Wahlenbergia islensis</i> (Carnarvon NP, Isla Gorge NP)		R	K
<i>Wrightia versicolor</i>		R	N
<i>Xylosma ovatum</i> (Shoalwater CP)		R	K

PE = Presumed extinct

E = Endangered

V = Vulnerable

R = Rare

K = Known from protected area record

N = Not known from protected area, recorded on other land within ecoregion

(D) Threatened flora species of the Condamine Catchment, Queensland (CCMA 2001).

Common name	Scientific name	Conservation status
Chinchilla wattle	<i>Acacia chinchillensis</i>	Vulnerable
Hando's wattle	<i>Acacia handonis</i>	Vulnerable
Ooline	<i>Cadellia pentastylis</i>	Vulnerable
Chinchilla white gum	<i>Eucalyptus argophloia</i>	Vulnerable
Plunkett mallee	<i>Eucalyptus curtisii</i>	Rare
Wallangarra white gum	<i>Eucalyptus scoparia</i>	Vulnerable
	<i>Picris evae</i>	Vulnerable
	<i>Stemmacantha australis</i>	Vulnerable
Toadflax	<i>Thesium australe</i>	Vulnerable

(E) Threatened flora species of the grassy ecosystem of the Darling Downs, Queensland (Goodland 2000).

Common name	Scientific name	Conservation status
Austral toadflax	<i>Thesium australe</i>	Vulnerable
Australian cornflower	<i>Stemmacantha australis</i>	Vulnerable
Hawk weed	<i>Picris evae</i>	Vulnerable
Belson's couch	<i>Homopholis belsonii</i>	Endangered
Branched finger panic	<i>Digitaria porrecta</i>	Endangered
	<i>Bothriochloa biloba</i>	Vulnerable
Hairy anchor plant	<i>Discaria pubescens</i>	Rare
	<i>Cyperus clarus</i>	Vulnerable
	<i>Solanum paparvofloium</i>	Endangered

Appendix 8. Weed species.

(A) Declared noxious weeds recorded within the Brigalow Belt South Ecoregion NSW (McCauley et al. 2002).

Common name	Scientific name
Tiger pear	<i>Opuntia aurantiaca</i>
Prickly pear	<i>Opuntia stricta</i>
Common prickly pear	<i>Opuntia stricta</i> var. <i>stricta</i>
Velvet tree pear	<i>Opuntia tomentosa</i>
St John's wort	<i>Hypericum perforatum</i>
Mother of millions	<i>Bryophyllum delagoense</i>
Sweet briar	<i>Rosa rubiginosa</i>
Blackberry	<i>Rubus fruticosus</i>
Tree of heaven	<i>Ailanthus altissima</i>
Hemlock	<i>Conium maculatum</i>
Scotch thistle	<i>Onopordum acanthium</i> ssp. <i>Acanthium</i>
Spotted thistle	<i>Scolymus maculatus</i>
Fireweed	<i>Senecio madagascariensis</i>
Hunter burr	<i>Xanthium occidentale</i>
Noogoora burr	<i>Xanthium occidentale</i>
Californian burr	<i>Xanthium orientale</i>
Bathurst burr	<i>Xanthium spinosum</i>
	<i>Xanthium strumarium</i>
Green cestrum	<i>Cestrum parqui</i>
African boxthorn	<i>Lycium ferocissimum</i>
Golden dodder	<i>Cuscuta campestris</i>
Paterson's curse	<i>Echium plantagineum</i>
Vipers bugloss	<i>Echium vulgare</i>
Blue heliotrope	<i>Heliotropium amplexicaule</i>
Yellow-flowered devil's claw	<i>Ibicella lutea</i>
Lippia	<i>Phyla canescens</i>
Mintweed	<i>Salvia reflexa</i>
Spiny burrgrass	<i>Cenchrus incertus</i>
Spiny burrgrass	<i>Cenchrus longispinus</i>
Johnson grass	<i>Sorghum halepense</i>

(B) Abundant weeds recorded within the Darling Riverine Plains Ecoregion NSW (Kearle et al. 2002).

Common name	Scientific name
Blackberry	<i>Rubus fruticosus</i> species complex
Prickly pear	<i>Opuntia stricta</i>
Paterson's curse	<i>Echium plantagineum</i>
African boxthorn	<i>Lycium ferocissimum</i>
Lippia	<i>Phyla canescens</i>
Variegated thistle	<i>Silybum marianum</i>
Mimosa bush	<i>Acacia farnesiana</i>
Water hyacinth	<i>Eichhornia crassipes</i>
Tiger pear	<i>Opuntia aurantiaca</i>

(C) Weeds of concern to cotton production (Australian Cotton 2002).

Common name	Scientific name
Chinese lantern	<i>Abutilon theophrasti</i>
Dwarf amaranth	<i>Amaranthus macrocarpus</i>
Bishop's weed	<i>Ammi majus</i>
Mexican poppy	<i>Argemone ochroleuca</i>
	<i>Chamaesyce drummondii</i>
Spear thistle	<i>Cirsium vulgare</i>
Wild melon	<i>Citrullus lanatus</i>
Australian bindweed	<i>Convolvulus erubescens</i>
Plains rattlepod	<i>Crotalaria dissitiflora</i>
Nutgrass	<i>Cyperus rotundus</i>
	<i>Cullen cinereum</i>
Fierce thornapple	<i>Datura ferox</i>
Awnless barnyard grass	<i>Echinochloa colona</i>
	<i>Euphorbia davidii</i>
Wild gooseberry	<i>Hibiscus trionum var. vesicarius</i>
Wild gooseberry	<i>Hibiscus trionum var. trionum</i>
Cowvine	<i>Ipomoea lonchophylla</i>
Deadnettle	<i>Lamium amplexicaule</i>
	<i>Leptochloa fusca</i>
Burr medic	<i>Medicago polymorpha</i>
	<i>Physalis minima</i>
Wireweed	<i>Polygonum aviculare</i>
	<i>Polymeria pusilla</i>
Pigweed	<i>Portulaca oleracea</i>
Rhynchosia	<i>Rhynchosia minima</i>
Soft roly poly	<i>Salsola kali</i>
Mint weed	<i>Salvia reflexa</i>
Sesbania pea	<i>Sesbania cannabina</i>
Pin sida	<i>Sida fibulifera</i>
Common sowthistle	<i>Sonchus oleraceus</i>
	<i>Trianthema portulacastrum</i>
Spineless caltrop	<i>Tribulus micrococcus</i>
Liverseed grass	<i>Urochloa panicoides</i>
Wild sunflower	<i>Verbesina enclioides</i>
Hunter burr	<i>Xanthium italicum</i>
Bathurst burr	<i>Xanthium spinosum</i>
Noogoora burr	<i>Xanthium occidentale</i>

Appendix 9. Regional ecosystems of the Brigalow Belt Ecoregion in Queensland declared as Endangered or Of Concern under the *Vegetation Management Regulation 2000* (Young et al. 1999) (Note that a detailed mapping project would be required to determine the distribution of regional ecosystems in cotton growing areas).

Number	Regional ecosystem description	Status
11.3.1	Brigalow <i>Acacia harpophylla</i> and/or belah <i>Casuarina cristata</i> on alluvial plains; provinces 3, 5, 7, 11, 14, 15, 29, 31, 34, 36	Endangered
11.3.11	Semi-evergreen vine thicket on alluvial plains; provinces 1, 2, 11, 14, 19	Endangered
11.3.13	Beefwood <i>Grevillea striata</i> open woodland on alluvial plains; provinces 1, 2	Endangered
11.3.17	Poplar box <i>Eucalyptus populnea</i> woodland with shrubby brigalow <i>Acacia harpophylla</i> and/or belah <i>Casuarina cristata</i> on alluvial plains; provinces 30, 31, 33, 35, 36	Endangered
11.3.21	Bluegrass <i>Dichanthium sericeum</i> and/or Mitchell grass <i>Astrelba</i> spp grassland on alluvial plains; provinces 6, 10, 11, 31, 35, 36	Endangered
11.3.22	Mound springs <i>Cyclosorus interruptus</i> or <i>Leptospermum polygalifolium</i> or <i>Phragmites karka</i> wetlands of mound springs; province 22	Endangered
11.3.23	Fuzzy box <i>Eucalyptus conica</i> , manna gum <i>Eucalyptus nobilis</i> , forest red gum <i>Eucalyptus tereticornis</i> , <i>Angophora floribunda</i> woodland on alluvial plains; province 31	Endangered
11.3.24	Native oak grass <i>Themeda avenacea</i> grassland on alluvial plains; province 31	Endangered
11.3.30	Narrow-leaved ironbark <i>Eucalyptus crebra</i> , ironbark ghost gum <i>Corymbia dallachiana</i> woodland on alluvial plains; provinces 1, 2	Endangered
11.3.32	Bulloak <i>Allocasuarina luehmannii</i> open woodland on alluvial plains; provinces 1, 2	Endangered
11.3.33	False sandalwood <i>Eremophila mitchellii</i> open woodland on alluvial plains; provinces 1, 2	Endangered
11.4.1	Semi-evergreen vine thicket ± belah <i>Casuarina cristata</i> on Cainozoic clay plains; provinces 11, 25	Endangered
11.4.3	Brigalow <i>Acacia harpophylla</i> and/or belah <i>Casuarina cristata</i> shrubby open forest on Cainozoic clay plains; provinces 26, 27, 28, 29, 30, 32, 33, 34	Endangered
11.4.4	Bluegrass <i>Dichanthium</i> spp, Mitchell grass <i>Astrelba</i> spp grassland on Cainozoic clay plains; provinces 7, 26	Endangered
11.4.5	Blackwood <i>Acacia argyrodendron</i> woodland on Cainozoic clay plains; provinces 11, 25	Endangered
11.4.9	Brigalow <i>Acacia harpophylla</i> shrubby open forest with yellowwood <i>Terminalia oblongata</i> on Cainozoic clay plains; 2, 3, 4, 5, 7, 11, 14	Endangered
11.4.10	Poplar box <i>Eucalyptus populnea</i> or pilliga box <i>Eucalyptus pilligaensis</i> , brigalow <i>Acacia harpophylla</i> , Belah <i>Casuarina cristata</i> open forest on margins of Cainozoic clay plains; provinces 29, 30	Endangered
11.5.16	Brigalow <i>Acacia harpophylla</i> open forest in depressions on Cainozoic sand plains; provinces 11, 16	Endangered
11.8.11	Bluegrass <i>Dichanthium sericeum</i> grassland on Cainozoic igneous rocks; provinces 2, 6	Endangered
11.8.13	Semi-evergreen vine thicket and microphyll rainforest on Cainozoic igneous rocks; provinces 6, 10, 14, 19, 20, 22	Endangered
11.9.5	Brigalow <i>Acacia harpophylla</i> and/or belah <i>Casuarina cristata</i> open forest on Cainozoic fine-grained sedimentary rocks; provinces 15, 18, 25, 26, 27, 28, 31	Endangered
11.9.6	<i>Acacia melvillei</i> ± brigalow <i>Acacia harpophylla</i> open forest on Cainozoic fine-grained sedimentary rocks; province 31	
11.9.10	Brigalow <i>Acacia harpophylla</i> , poplar box <i>Eucalyptus populnea</i> open forest on Cainozoic fine-grained sedimentary rocks; provinces 15, 18, 20, 22, 25, 26, 28	Endangered
11.9.12	Bleugrass <i>Dichanthium sericeum</i> grassland with clumps of brigalow <i>Acacia harpophylla</i> on Cainozoic fine-grained sedimentary rocks;	Endangered

	provinces 21, 25	
11.11.14	Brigalow <i>Acacia harpophylla</i> open forest on deformed and metamorphosed sediments and interbedded volcanics; provinces 14, 17, 18	Endangered
11.11.18	Semi-evergreen vine thicket on old sedimentary rocks with varying degrees of metamorphism and folding; provinces 21, 22	Endangered
11.1.3	Sedgeland associated with coastal dunes; provinces 1, 14	Of concern
11.2.3	Littoral rainforests; provinces 1, 14	Of concern
11.3.2	Poplar box <i>Eucalyptus populnea</i> woodland on alluvial plains; provinces 3, 4, 5, 6, 7, 8, 11, 16, 17, 20, 22, 25, 27, 31, 35, 36	Of concern
11.3.3	Coolibah woodland on alluvial plains; provinces 3, 4, 7, 8, 10, 11, 14, 24, 25, 27, 31, 35, 36	Of concern
11.3.4	Forest red gum <i>Eucalyptus tereticornis</i> and/or river red gum <i>Eucalyptus camaldulensis</i> tall woodland on alluvial plains; provinces 1, 2, 3, 4, 5, 6, 7, 11, 14, 16, 17, 18, 22, 24, 25, 26, 27, 29, 31, 34, 35, 36	Of concern
11.3.5	Gidgee <i>Acacia cambagei</i> woodland on alluvial plains, provinces 7, 8	Of concern
11.3.6	Silver-leaved ironbark <i>Eucalyptus melanophloia</i> woodland on higher alluvial plains; provinces 16, 24, 26	Of concern
11.3.7	Bloodwood-Moreton bay ash <i>Corymbia</i> spp woodland on alluvial plains; provinces 1, 2, 7, 8	Of concern
11.3.8	Blackwood <i>Acacia argyrodendron</i> woodland on alluvial plains; provinces 7, 8	Of concern
11.3.12	Broad-leaved tea-tree <i>Melaleuca viridiflora</i> woodland on alluvial plains; provinces 1, 2, 14	Of concern
11.3.15	Coolibah, <i>Eucalyptus coolabah</i> , belalie <i>Acacia stenophylla</i> , lignum <i>Muehlenbeckia cunninghamii</i> fringing woodland on alluvial plains; province 35	Of concern
11.3.16	Black box <i>Eucalyptus largiflorens</i> ± gidgee <i>Acacia cambagei</i> woodland on alluvial plains; provinces 35, 36	Of concern
11.3.20	Whitewood <i>Atalaya hemiglauca</i> , leopard tree <i>Flindersia maculosa</i> , <i>Acacia</i> spp open woodland with five-minute grass <i>Tripogon loliiformis</i> on alluvial plains; province 35	Of concern
11.3.25	Forest red gum <i>Eucalyptus tereticornis</i> or river red gum <i>Eucalyptus camaldulensis</i> , river oak <i>Casuarina cunninghamiana</i> fringing woodland on alluvial plains; 1, 2, 6, 11, 26, 31, 36	Of concern
11.3.27	Swamps. Freshwater wetlands; provinces 1, 7, 8, 11, 14, 20, 31, 35, 36	Of concern
11.3.28	Brigalow <i>Casuarina cristata</i> ± coolibah <i>Eucalyptus coolabah</i> open woodland on alluvial plains; provinces 29, 34, 35, 36	Of concern
11.3.31	Canegrass <i>Ophiuros exaltatus</i> , <i>Dichanthium</i> spp grassland on alluvial plains; provinces 1, 2	Of concern
11.3.34	Boree <i>Acacia tephрина</i> woodland on alluvial plains; provinces 1, 2, 7	Of concern
11.4.6	Gidgee <i>Acacia cambagei</i> woodland on Cainozoic clay plains; provinces 7, 8	Of concern
11.4.7	Poplar box-brigalow <i>Eucalyptus populnea</i> - <i>Acacia harpophylla</i> woodland on Cainozoic clay plains; provinces 7, 8, 26, 29, 30, 33, 34	Of concern
11.4.8	Dawson gum <i>Eucalyptus cambageana</i> woodland with brigalow <i>Acacia harpophylla</i> or blackwood <i>Acacia argyrodendron</i> on Cainozoic clay plains; provinces 3, 4, 5, 6, 7, 8, 11, 13	Of concern
11.4.11	Bluegrass <i>Dichanthium sericeum</i> , Mitchell grass <i>Astrebla</i> spp and patchy brigalow <i>Acacia harpophylla</i> , coolibah <i>Eucalyptus coolabah</i> on Cainozoic clay plains: province 7	Of concern
11.4.12	Poplar box <i>Eucalyptus populnea</i> woodland on eroding edge of Cainozoic clay plains: provinces 29, 30, 33, 34	Of concern
11.5.15	Semi-evergreen vine thicket on Cainozoic sand plains/remnant surfaces; provinces 11, 8, 27	Of concern
11.7.1	Brigalow <i>Acacia harpophylla</i> and/or river oak <i>Casuarina cunninghamiana</i> and mountain yapunyah <i>Eucalyptus thozetiana</i> or coolibah <i>Eucalyptus microcarpa</i> woodland on lower scarp slopes on Cainozoic lateritic duricrust; ooline <i>Cadellia pentastylis</i> sometimes present; provinces 7, 8, 11, 13, 29, 30, 33	Of concern

11.8.3	Semi-evergreen vine thicket on Cainozoic igneous rocks: provinces 6, 9, 10, 12, 22, 23, 24, 25, 26, 31	Of concern
11.8.6	Bonewood <i>Macropteranthes leichhardtii</i> thicket on Cainozoic igneous rocks; province 23	Of concern
11.8.8	White box <i>Eucalyptus albens</i> , narrow-leaved ironbark <i>Eucalyptus crebra</i> woodland on Cainozoic igneous rocks; province 31	Of concern
11.8.9	Cypress pine <i>Callitris</i> spp and vine thicket on Cainozoic igneous rocks; province 31	Of concern
11.9.1	Brigalow <i>Acacia harpophylla</i> , Dawson gum <i>Eucalyptus cambageana</i> open forest on Cainozoic fine-grained sedimentary rocks; provinces 11, 15, 18, 21, 25, 26	Of concern
11.9.2	Silver-leaved ironbark <i>Eucalyptus melanophloia</i> open woodland on Cainozoic fine-grained sedimentary rocks; provinces 18, 25, 27, 29	Of concern
11.9.3	Bluegrass <i>Dichanthium</i> spp, Mitchell grass <i>Astrebla</i> spp grassland on Cainozoic fine-grained sedimentary rocks; provinces 26, 29	Of concern
11.9.4	Semi-evergreen vine thicket on Cainozoic fine-grained sedimentary rocks; provinces 18, 25, 26, 27, 31	Of concern
11.9.7	Poplar box <i>Eucalyptus populnea</i> , false sandalwood <i>Eremophila mitchellii</i> shrubby woodland on Cainozoic fine-grained sedimentary rocks; provinces 15, 20, 26, 27, 31, 32	Of concern
11.9.8	Bonewood <i>Macropteranthes leichhardtii</i> thicket on Cainozoic fine-grained sedimentary rocks; provinces 15, 25	Of concern
11.9.9	Narrow-leaved ironbark <i>Eucalyptus crebra</i> woodland on Cainozoic fine-grained sedimentary rocks; provinces 13, 15, 18, 20, 31	Of concern
11.9.11	Brigalow <i>Acacia harpophylla</i> shrubland on Cainozoic fine-grained sedimentary rocks; provinces 21, 26	Of concern
11.11.7	Woodland on serpentinite; province 14	Of concern
11.11.13	Brigalow <i>Acacia harpophylla</i> or blackwood <i>Acacia argyrodendron</i> , yellowwood <i>Terminalia oblongata</i> low open forest on deformed and metamorphosed sediments and interbedded volcanics; provinces 3, 5, 11, 18	Of concern
11.11.16	Dawson gum <i>Eucalyptus cambageana</i> , brigalow <i>Acacia harpophylla</i> woodland on old sedimentary rocks with varying degrees of metamorphism and folding; provinces 3, 11, 17, 18	Of concern
11.11.17	Bluegrass <i>Dichanthium serceum</i> grassland on old sedimentary rocks with varying degrees of metamorphism and folding; provinces 6, 11	Of concern
11.11.19	Mountain yapunyah <i>Eucalyptus thozetiana</i> , brigalow <i>Acacia harpophylla</i> woodland on old sedimentary rocks with varying degrees of metamorphism and folding; provinces 3, 6	Of concern
11.12.17	Poplar box <i>Eucalyptus populnea</i> woodland on igneous rocks; provinces 21, 22	Of concern

Appendix 10. Bird species recorded by Evan Cleland (pers. comm. 2003) on irrigated cropping fields (480 ha) and associated water surfaces (25 ha) at 'Warendi', (near Goondiwindi), Queensland.

Common name	Scientific Name	Comments
Species recorded as part of Birds Australia Database project		
Crested pigeon	<i>Ocyphaps lophotes</i>	
Great cormorant	<i>Phalacrocorax varius</i>	
Little pied cormorant	<i>Phalacrocorax melanoleucos</i>	
Darter	<i>Anhinga melanogaster</i>	
Australian pelican	<i>Pelecanus conspicillatus</i>	
Yellow-billed spoonbill	<i>Platalea flavipes</i>	
Little egret	<i>Egretta garzetta</i>	
Great Egret	<i>Ardea alba</i>	
White-faced heron	<i>Egretta novaehollandiae</i>	
White-necked heron	<i>Ardea pacifica</i>	
Australian wood duck	<i>Chenonetta jubata</i>	Breeding
Pacific black duck	<i>Anas superciliosa</i>	Breeding
Grey teal	<i>Anas gracilis</i>	Breeding
Whistling kite	<i>Haliastur sphenurus</i>	
Black-shouldered kite	<i>Elanus axillaris</i>	Breeding
Australian hobby	<i>Falco longipennis</i>	Often present over mature cotton, hawking insects
Nankeen kestrel	<i>Falco cenchroides</i>	Common, always present
Sulphur-crested cockatoo	<i>Cacatua galerita</i>	
Galah	<i>Eolophus roseicapilla</i>	
Tree martin	<i>Hirundo nigricans</i>	
Fairy martin	<i>Hirundo ariel</i>	Breeding resident beneath culverts etc.
Willie wagtail	<i>Rhipidura leucophrys</i>	
Magpie-lark	<i>Grallina cyanoleuca</i>	Breeding
Little grassbird	<i>Megalurus gramineus</i>	
Clamorous reed warbler	<i>Acrocephalus stentoreus</i>	Breeding
Richard's pipit	<i>Anthus novaeseelandiae</i>	Common, lives beneath cotton but not often picked up on surveys
Pied butcherbird	<i>Cracticus nigrogularis</i>	
Grey butcherbird	<i>Cracticus torquatus</i>	
Australian magpie	<i>Gymnorhina tibicen</i>	
Crow and raven spp	<i>Corvus spp</i>	
Other species commonly seen but not part of survey		
Emu	<i>Dromaius novaehollandiae</i>	Once sometimes breed in cotton stubble, but no longer the case due to modern pupae control
Australasian grebe	<i>Tachybaptus novaehollandiae</i>	
Nankeen night heron	<i>Nycticorax caledonicus</i>	
Royal spoonbill	<i>Platalea regia</i>	
Spotted harrier	<i>Circus assimilis</i>	Hunting over cotton and other crops
Marsh harrier	<i>Circus approximans</i>	Hunting over cotton and other crops
Wedge-tailed eagle	<i>Aquila audax</i>	
Brown falcon	<i>Falco berigora</i>	
Black-tailed native-hen	<i>Gallinula ventralis</i>	
Masked lapwing	<i>Vanellus miles</i>	
Australian pratincole	<i>Stiltia isabella</i>	Not seen for some years but may still breed in fallow fields
Cockatiel	<i>Nymphicus hollandicus</i>	Generally a flyover

Appendix 11. The ecosystem services important as inputs to production or in maintaining ecosystems and the natural resource base in the Goulburn Broken Catchment, northern Victoria (Binning et al. 2001).

Ecosystem Service	Description	Input to Production	Maintenance of Natural Assets
1. Pollination	Service of fertilizing flowers allowing for seed and fruit production; critical to regeneration of plants and to production of fruits and seeds	Essential input to production of all plants and fruits. Plants requiring insect pollination are dependent on adequate number of pollinators. Key risk is dependence of fruit growers on European bees which are at risk from honeybee mite	Pollination is required to facilitate habitat regeneration
2. Life-fulfilling services	Provision of aesthetic beauty, cultural, intellectual, and spiritual inspiration, sense of place, existence value, scientific discovery and serenity	Life-fulfilment arises from sense of place or enjoyment derived from landscape. Key input to housing, recreation and tourism industries	Relates to state of landscape and its ongoing capacity to provide life-fulfilling services. Note that landscape changes that please some people are not highly valued by others
3. Regulation of climate	Relates to services provided by plants, animals and other organisms that regulate atmospheric composition and weather patterns creating a habitable environment	Key input to production: variation in climates leads to large fluctuations in agricultural yields. Capacity of land uses and industries to adapt to changing climate is important	Climate change is occurring at global scale because of increases in greenhouse gases
4. Pest control	Service of controlling organisms that are unwanted or cause damage to things that are valuable to people	Of particular importance to horticulture, vegetable, cropping and grazing industries, including pesticide use (a significant cost of production)	May be required to facilitate habitat regeneration, maintain soil biota or aquatic systems health
5. Genetic resources	Part of biodiversity which consists of ecosystem, species and genetic diversity	Capacity to develop different strains of crops, fruit trees and pastures to adapt to changing conditions (e.g. climate) is important	Fundamental to maintaining natural assets and ecosystem resilience (i.e. have capacity to bounce back from disturbance)
6. Maintenance and regeneration of habitat	Service of maintaining biota through processes of regeneration, maintenance of viable populations of flora and fauna and management of vegetation to facilitate production, dispersal and growth of seed	Important for maintaining natural vegetation used for recreation, and biodiversity and timber production	Habitat degrades in absence of regeneration; grazing, clearing and weed invasion can all reduce its regenerative capacity
7. Provision of shade and shelter	Service provided by vegetation that ameliorates extremes in weather and climate at a paddock scale for plants, animals and structures	May be significant in relation to animal health and fruit production	Required for regeneration of habitat and maintenance of aquatic systems
8. Filtration and	Relates to functions	Clean water is a key input to	Contributes to maintenance

erosion control	performed by soil components (including soil biodiversity) and vegetation in minimizing soil loss and filtering sediments from water to improve water quality	many industries in catchment	of soil and water resources in natural and modified ecosystems. Impact of turbidity and sediments in aquatic systems and soil loss in grazing and cropping systems are key issues
9. Maintenance of soil health	Is required to sustain biological productivity, promote air and water quality and maintain plant, animal and human health	Integral to plant growth and a key input to all plant and crop production	Key issue for all agricultural land uses. Trends in soil structure, acidity, and soil biota vary widely depending on individual farm management practices
10. Maintenance of healthy waterways	Healthy waterways are defined by 'good' water quality and balanced community of aquatic biota (fish, aquatic mammals, insects, plankton, bacteria and plants), absence of anthropogenic pollutants, good habitat condition and hydrological regime that sustains aquatic biota. This service encompasses biophysical processes that break down and assimilate anthropogenic pollutants, organic matter and nutrients, control and eliminate water-borne pathogens, trap sediment, prevent accessions of excess sediment and salt, provide suitable habitat for aquatic biota, and provide aesthetically pleasing aquatic and riparian environment	Significant input to production for all goods dependent on water. Water quality is generally sufficient, but particularly critical for town water supplies	Potentially affected by most land uses and industries
11. Maintenance of river flows and groundwater levels	Service of collection and distribution of water through rivers, lakes, wetlands and groundwater systems. Mitigation of floods is also included	Integral to all plant and animal production and also important to some manufacturing and processing industries	Three issues are of particular importance: (1) rising groundwater tables and salinization; (2) management of environmental flows; and (3) flooding and floodplain land use
12. Waste absorption and breakdown	Captures role played by various organisms (terrestrial and aquatic) in absorbing and breaking down wastes	Generally not a direct input to production, except in improving water quality form industries requiring clean water	Ecosystems can assimilate wastes, but capacity to absorb excess wastes is an issue (e.g. nitrogen and phosphorus loadings in aquatic systems)