

Commonwealth of Australia

**Inclusion of ecological communities in the list of threatened ecological communities under section 181 of the *Environment Protection and Biodiversity Conservation Act 1999***

I, MALCOLM BLIGH TURNBULL, Minister for the Environment and Water Resources, hereby amend the list referred to in section 181 of that Act by:

including in the list in the critically endangered category:

- Mabi Forest (Complex Notophyll Vine Forest 5b), as described in the Schedule to this instrument; and
- Swamps of the Fleurieu Peninsula, as described in the Schedule to this instrument;

including in the list in the endangered category:

- Semi-evergreen Vine Thickets of the Brigalow Belt (North and South) and Nandewar Bioregions;
- Shale/Sandstone Transition Forest;
- The community of native species dependent on natural discharge of groundwater from the Great Artesian Basin;
- Bluegrass (*Dichanthium* spp.) dominant grasslands of the Brigalow Belt Bioregions (North and South); and
- Brigalow (*Acacia harpophylla* dominant and co-dominant);

including in the list in the vulnerable category:

- *Eucalyptus ovata* – *Callitris oblonga* Forest, as described in the Schedule to this instrument;

deleting from the list in the endangered category:

- Semi-evergreen Vine Thickets of the Brigalow Belt South Bioregion in New South Wales.

Dated this.....12<sup>th</sup> .....day of.....October.....2007

Malcolm Bligh Turnbull

Minister for the Environment and Water Resources

## SCHEDULE

### **Mabi Forest (Complex Notophyll Vine Forest 5b)**

Mabi Forest (Complex Notophyll Vine Forest 5b) is found on highly fertile basalt-derived soils, in the moist lowlands, foothills and uplands on the Atherton Tablelands in the Wet Tropics Bioregion of northern Queensland. A remnant patch is also located at Shiptons Flat, near Cooktown. Annual rainfall in this area varies between 1300 and 1600 mm. The ecological community is heterogeneous within and between remnant patches, due to the influence of position in the landscape, local topography, and drainage.

Mabi Forest (Complex Notophyll Vine Forest 5b) is characterised by an uneven canopy (25-45m) with many tree layers. Most trees have a deep crown, often extending down to between the top-third and top-half of the trunk. As a result of the greater depth of crown, Mabi Forest (Complex Notophyll Vine Forest 5b) is distinctly different from nearby simple notophyll vine forests that only have shallow crowns with few layers.

The description of the ecological community is based on leaf size of the component vegetation: notophylls are plants with leaf size between 20.25–45 cm<sup>2</sup>, microphyllic plants have leaf sizes between 2.25–20.25 cm<sup>2</sup>, while mesophyllic plants have leaf sizes between 45–180 cm<sup>2</sup>.

Notophylls (with some microphylls), are most common in the canopy of Mabi Forest (Complex Notophyll Vine Forest 5b), with mesophylls frequently found in the lower layers. These notophylls are commonly semi-evergreen, and undergo heavy leaf fall during times of moisture stress. The canopy also contains scattered deciduous trees. The trunks of trees in this ecological community are uneven in size, and plank buttresses are a common feature in remnant or mature patches. Woody vines are generally conspicuous. Epiphytes are rare, but where they do occur, they are high in the branches, with only scattered epiphytes being found lower down. A prominent medium to dense shrub and scrambling vine understorey occurs beneath the tall canopy, and is a unique and distinguishing feature of this forest type. The shrub/vine layer is generally only 1-3 metres high. A list of characteristic plant species given below.

Mabi Forest (Complex Notophyll Vine Forest 5b) is characterised by the following plant species. The total flora species list for the ecological community is considerably larger than that given below, with many species present at only some sites, or in very low densities. Species may be present in the ecological community either in the seed bank, or as above-ground individuals. Not every species will be present at every site, and the species composition of the remnant patches will be influenced by patch-size, recent environmental conditions, local disturbance history, and site-specific geographic and topographic locations.

Stratum	Species*	Common Name/s
Canopy	<i>Aleurites moluccana</i> <i>Alstonia scholaris</i> <i>Argyrodendron peralatum</i> <i>Castanospermum australe</i> <i>Diploglottis cunninghamii</i> <i>Elaeocarpus grandis</i>  <i>Ficus virens</i> <i>Ficus obliqua</i> <i>Melia azedarach</i>  <i>Myristica muelleri</i> <i>Terminalia sericocarpa</i> <i>Toona australis</i>	<i>Candlenut Tree</i> White Cheesewood, Milky Pine, Whitewood Red Tulip Oak, Tulip Oak Black Bean, Moreton Bay Chestnut, Bean Tree Tamarind Blue Quandong, Silver Quandong, Blue Fig, White Quandong, Cooloon, Blueberry Ash, Blue Fig White Fig Small-leaved Moreton Bay Fig, Small-leaved Fig White Cedar, Tulip Cedar, Bead Tree, Persian Lilac, Wyndet Native Nutmeg Damson, Sovereignwood <i>Red Cedar</i>
Subcanopy	<i>Acronychia acidula</i> <i>Aglaia sapindina</i> <i>Alangium villosum</i> subsp <i>polyosmoides</i> <i>Arytera divaricata</i> <i>Cupaniopsis tomentella</i> (V) <i>Daphnandra dielsii</i> <i>Euodia bonwickii</i>	Lemon Wood  Muskwood, Black Muskheart  Coogera, Gap Axe, Rose Tamarind Boonah Tuckeroo
Understorey	<i>Codiaeum variegatum</i> <i>Hodgkinsonia frutescens</i> (V) <i>Phaleria octandra</i> <i>Sauropus macranthus</i> (V)	Atherton Turkey Bush
Lianes (vines)	<i>Cissus antarctica</i> <i>Cissus repens</i> <i>Connarus conchocarpus</i> <i>Cudrania cochinchinensis</i> <i>Elaeagnus latifolia</i> <i>Embelia australiana</i> <i>Melodinus australis</i> <i>Melodinus baccellianus</i> <i>Ripogonum album</i> <i>Smilax australis</i> <i>Tylophora benthamii</i>	Water-vine    Southern Melodinus  White Supplejack Austral Sarsaparilla, Barbed-wire Vine Coast Tylophora
Epiphytes	<i>Platynerium bifurcatum</i> <i>Platynerium superbum</i> <i>Asplenium nidus</i>	Elkhorn, Elkhorn Fern Staghorn, Staghorn Fern Bird's-nest Fern

\* V = listed as a vulnerable species under the *Environment Protection and Biodiversity Conservation Act 1999*

## Swamps of the Fleurieu Peninsula

The Swamps of the Fleurieu Peninsula are confined to the IBRA region “Lofty Block”. They are limited to the local catchment areas of Tookayerta, Hindmarsh, Parawa, Myponga, Yankalilla, Onkparinga, Currency Creek and Finnis.

The Swamps of the Fleurieu Peninsula are localised wetlands occurring in high rainfall areas. They are densely vegetated and occur adjacent to waterlogged soils around low-lying creeks and flats. The swamps are typified by their reedy or heathy vegetation growing on peat, silt, peat silt, or black clay soils.

The Swamps of the Fleurieu Peninsula ecological community is characterised by the following plant species. The total flora species list for the ecological community is considerably larger than that given below, with many species present at only some sites, or in very low densities. Species may be present in the ecological community either in the seed bank, or as above-ground individuals. Not every species will be present at every site, and the species composition of the remnant patches will be influenced by patch-size, recent environmental conditions, local disturbance history, and site-specific geographic and topographic locations.

Species *	Common name/s
<i>Baurnea rubiginosa</i>	Soft Twigrush
<i>Baumea tetragona</i>	Square Twigrush
<i>Carex appressa</i>	
<i>Centrolepis fascicularis</i>	Bristlewort
<i>Deyeuxia quadriseta</i>	
<i>Drosera binata</i>	Forked Sundew
<i>Eleocharis gracilis</i>	
<i>Einpodisma minus</i>	Spreading Rope Rush
<i>Euphrasia collina</i> subsp. <i>osbornii</i> (E)	Osborn’s Eyebright
<i>Gahnia sieberiana</i>	Sword Grass, Sawsedge
<i>Gleichenia microphylla</i>	Scrambling Coral-fern, Coral-fern, Umbrella Fern
<i>Goodenia ovata</i>	Hop Goodenia
<i>Isolepis inundata</i>	
<i>Lepidosperma longitudinale</i>	Pithy Swordsedge
<i>Leptospermum continentale</i>	Prickly Tea-tree
<i>Leptospermum lanigerum</i>	Woolly Tea-tree
<i>Patersonia occidentalis</i>	
<i>Prasophyllum frenchii</i> (E)	Maroon Leek-orchid, Slaty Leek-orchid, Stout Leek-orchid, French’s Leek-orchid
<i>Schoenus carsei</i>	Wiry Bog Rush
<i>Sprengelia incarnata</i>	Pink Swamp-heath
<i>Viminaria juncea</i>	Golden Spray, Native Broom
<i>Xyris operculata</i>	

\* E listed as an endangered species under the *Environment Protection and Biodiversity Conservation Act 1999*.

### ***Eucalyptus ovata* – *Callitris oblonga* Forest**

The *Eucalyptus ovata* – *Callitris oblonga* Forest ecological community is a type of *Eucalyptus* forest with a shrubby understorey. This ecological community is characterised by:

- a *Eucalyptus* overstorey, typically made up of *E. ovata*, but in some areas it may be made up of by *E. viminalis* or *E. amygdalina* (Harris & Kirkpatrick 1991a; Zacharek 2000);
- a midstorey of *Callitris oblonga* subsp. *oblonga*; and,
- a shrubby understorey, of which *Bursaria spinosa*, *Melaleuca gibbosa* and *Acacia dealbata* are common components.

The ecological community is characterised by the association of *Eucalyptus ovata* and *Callitris oblonga*, and occurs in riparian (riverine) habitats. On alluvial flats the ecological community generally forms shrubby woodland, often in association with *Melaleuca gibbosa*. On rocky slopes this ecological community may lose its *Eucalyptus* overstorey due to topographical and soil factors, and form tall open shrubland with *Callistemon pallidus*. On rocky slopes, *C. oblonga* may therefore be the sole dominant, or co-dominant with eucalypts. *Callitris oblonga* is likely to be less dominant or co-dominant on the alluvial flats, where eucalypts, particularly *E. ovata*, become more dominant (Harris & Kirkpatrick 1991a).

This ecological community can vary in structure, for example it may occur as riparian forest, riparian scrub or as forest with a grassy understorey, reflecting a combination of the small-scale variations in topographic and disturbance effects of the riparian environment. The ecological community's composition has been degraded in some places and its structure has often been modified; the shrub layer may be absent due to overgrazing or *Callitris oblonga* absent due to frequent fire. Weeds also heavily infest some patches (Zacharek 2000).

There are some isolated remnants from which *Callitris oblonga* has been excluded, by fire or other disturbance. The absence of *C. oblonga* in these remnants is an index of the level of degradation of the ecological community. As a key species *Callitris oblonga* plays an important role in the ecological community, and its loss affects the habitat for other species. Remnants in which this species is absent are therefore considered degraded to such an extent that they are no longer part of the listed ecological community.

The most common and characteristic flora species of this ecological community, plus listed threatened flora associated with it, are listed in Table 1. Table 2 provides a list of fauna species recorded within the ecological community.

**Table 1.** Characteristic native plant species of the *Eucalyptus ovata* – *Callitris oblonga* Forest ecological community. Not every species will be present at all locations. This list is not comprehensive, and does not include all plant species found in the ecological community.

Stratum	Species	Common name
Large trees	<i>Eucalyptus ovata</i> <i>Eucalyptus viminalis</i>	Black Gum, Swamp Gum White Gum, Ribbon Gum
Small trees – large shrubs	<i>Callitris oblonga</i> <i>Allocasuarina verticillata</i> <i>Bursaria spinosa</i> <i>Acacia dealbata</i> <i>Banksia marginata</i> <i>Pomaderris apetala</i> <i>Acacia verticillata</i> <i>Callistemon pallidus</i> <i>Leptospermum lanigerum</i> <i>Melaleuca ericifolia</i> <i>Acacia mucronata</i> <i>Notelaea ligustrina</i> <i>Beyeria viscosa</i> <i>Melaleuca pustulata</i>	South Esk Pine Drooping Sheoak Blackthorn Silver Wattle Silver Banksia Dogwood, Hazel Pomaderris Prickly Moses Lemon Bottlebrush Woolly Tea-tree Swamp Paperbark Variable Sallow Wattle Privet Mock-olive Pinkwood
Small – medium shrubs	<i>Melaleuca gibbosa</i> <i>Leptospermum scoparium</i> <i>Hibbertia riparia</i> <i>Epacris impressa</i> <i>Micrantheum hexandrum</i> <i>Dodonaea viscosa</i> <i>Coprosma quadrifida</i> <i>Hakea microcarpa</i>	Slender Honey-myrtle Manuka Stream Guinea-flower Common Heath Box Micrantheum Sticky Hop-bush Prickly Currant-bush Small-fruited Needlebush
Ground layer	<i>Lomandra longifolia</i> <i>Poa labillardierei</i> <i>Bossiaea prostrata</i> <i>Schoenus apogon</i> <i>Lepidosperma elatius</i> <i>Acaena novae-zelandiae</i> <i>Gonocarpus tetragynus</i> <i>Astroloma humifusum</i> <i>Gonocarpus micranthus</i>	Spiny-headed Mat-rush Tussock Grass Creeping Bossiaea Fluke Bogrush  Bidgee-widgee, Bidy Bidy  Native Cranberry

**Table 2.** Fauna species associated with *Eucalyptus ovata* - *Callitris oblonga* Forest ecological community. Not every species will be present at all locations. This list is not comprehensive, and does not include all fauna species found in the ecological community.

Class	Species	Common Name
Gastropods	<i>Beddomeia krybetes</i>	St Pauls Hydrobiid Snail
Insects	<i>Anapheis java</i> <i>Antipodia chaostola leucophaea</i> <i>Costora delora</i> <i>Lingora aurata</i>	Chaostola Skipper
Amphibians	<i>Crinia signifera</i> <i>Crinia tasmaniensis</i> <i>Limnodynastes dumerili</i> <i>Litoria ewingi</i>	Brown Froglet Tasmanian Froglet Banjo Frog Brown Tree Frog
Mammals	<i>Antechinus minimus minimus</i> <i>Antechinus swainsonii swainsonii</i> <i>Bettongia gaimardi</i> <i>Dasyurus maculatus maculatus</i> <i>Dasyurus viverrinus</i> <i>Macropus rufogriseus rufogriseus</i> <i>Ornithorhynchus anatinus</i> <i>Potorous tridactylus apicalis</i> <i>Pseudocheirus peregrinus viverrinus</i> <i>Sarcophilus harrisi</i> <i>Tachyglossus aculeatus</i> <i>Thylogale billardieri</i> <i>Trichosurus vulpecula fuliginosus</i> <i>Vombatus ursinus tasmaniensis</i>	Tasmanian Swamp Antechinus Tasmanian Dusky Antechinus Tasmanian Bettong Spotted-tail Quoll Eastern Quoll Bennetts Wallaby Platypus Long-Nosed Potoroo Common Ringtail Possum Tasmanian Devil Echidna Tasmanian Pademelon Brushtail Possum Common Wombat
Birds	<i>Acanthiza chrysorrhoa</i> <i>Acanthiza ewingii</i> <i>Acanthiza pusilla</i> <i>Acanthorhynchus tenuirostris</i> <i>Accipiter cirrhocephalus cirrhocephalus</i> <i>Accipiter fasciatus fasciatus</i> <i>Aegotheles cristatus tasmanicus</i> <i>Alauda arvensis</i> <i>Anas castanea</i> <i>Anas gracilis gracilis</i> <i>Anas superciliosa superciliosa</i> <i>Anthochaera chrysoptera tasmanica</i> <i>Anthochaera paradoxa</i> <i>Anthus novaeseelandiae</i> <i>Aquila audax fleayi</i> <i>Ardea novaehollandiae</i> <i>Artamus cyanopterus cyanopterus</i> <i>Biziura lobata</i> <i>Cacomantis flabelliformis prionuris</i> <i>Calyptorhynchus funereus xanthanotus</i> <i>Charadrius bicinctus</i> <i>Charadrius ruficapillus</i> <i>Chrysococcyx basalis</i> <i>Chrysococcyx lucidus plagosus</i> <i>Cinclosoma punctatum dovei</i> <i>Circus approximans gouldi</i> <i>Colluricincla harmonica harmonica</i> <i>Coracina novaehollandiae</i> <i>Corvus tasmanicus tasmanicus</i> <i>Coturnix ypsilophora ypsilophorus</i>	Yellow-Rumped Thornbill Tasmanian Thornbill Brown Thornbill King Island Eastern Spinebill Collared Sparrowhawk Brown Goshawk Australian Owlet-Nightjar Common Skylark Chestnut Teal Grey Teal Pacific Black Duck Little Wattlebird Yellow Wattle Bird Richards Pipit Wedge-tailed Eagle White-faced Heron Dusky Wood-Swallow Musk Duck Fan-tailed Cuckoo Yellow-tailed Black Cockatoo Double-banded Plover Red-capped Plover Horsfields Bronze-Cuckoo Shining Bronze-Cuckoo Spotted Quail-Thrush Swamp Harrier Grey Shrike-Thrush Black-Faced Cuckoo-Shrike Forest Raven Brown Quail

Class	Species	Common Name
	<i>Cracticus torquatus cinereus</i>	Grey Butcherbird
	<i>Cuculus pallidus</i>	Pallid Cuckoo
	<i>Cygnus atratus</i>	Black Swan
	<i>Dacelo novaeguineae novaeguineae</i>	Laughing Kookaburra
	<i>Egretta alba</i>	Great Egret
	<i>Emblema bella</i>	Beautiful Firetail
	<i>Ephthianura albifrons</i>	White-fronted Chat
	<i>Falco berigora tasmanica</i>	Brown Falcon (Tasmanian)
	<i>Fulica atra australis</i>	Eurasian Coot
	<i>Gallinula mortierii</i>	Tasmanian Native Hen
	<i>Glossopsitta concinna</i>	Musk Lorikeet
	<i>Neophema chrysostoma</i>	Blue-winged Parrot
	<i>Gymnorhina tibicen hypoleuca</i>	Australian Magpie (white-backed subsp.)
	<i>Haliastur sphenurus</i>	Whistling Kite
	<i>Hirundapus caudacutus</i>	White-throated Needletail
	<i>Hirundo neoxena</i>	Welcome Swallow
	<i>Hirundo nigricans nigricans</i>	Tree Martin
	<i>Lichenostomus flavicollis</i>	Yellow-throated Honeyeater
	<i>Malurus cyaneus cyaneus</i>	Superb Fairy Wren
	<i>Manorina melanocephala melanocephala</i>	Noisy Miner
	<i>Melanodryas vittata</i>	Dusky Robin
	<i>Melithreptus affinis</i>	Black-headed Honeyeater
	<i>Melithreptus validirostris</i>	Strong-billed Honeyeater
	<i>Myiagra cyanoleuca</i>	Satin Flycatcher
	<i>Ninox novaeseelandiae leucopsis</i>	Southern Boobook (Tasmanian)
	<i>Pachycephala pectoralis</i>	Golden Whistler
	<i>Pardalotus punctatus</i>	Spotted Pardalote
	<i>Pardalotus striatus striatus</i>	Striated Pardalote
	<i>Petroica multicolor boodang</i>	Scarlet Robin
	<i>Petroica phoenicea</i>	Flame Robin
	<i>Phaps chalcoptera</i>	Common Bronzewing
	<i>Phaps elegans</i>	Brush Bronzewing
	<i>Phylidonyris melanops crassirostris</i>	Tawny-crowned Honeyeater
	<i>Phylidonyris novaehollandiae</i>	New Holland Honeyeater
	<i>Phylidonyris pyrrhoptera</i>	Crescent Honeyeater
	<i>Platycercus caledonicus</i>	Green Rosella
	<i>Platycercus eximius diemenensis</i>	Eastern Rosella (Tasmanian)
	<i>Podargus strigoides strigoides</i>	Tawny Frogmouth
	<i>Poliiocephalus poliocephalus</i>	Hoary-headed Grebe
	<i>Porphyrio porphyrio melanotus</i>	Purple Swamphen
	<i>Rhipidura fuliginosa albiscapa</i>	Grey Fantail
	<i>Sericornis humilis</i>	White-browed Scrub Wren
	<i>Strepera fuliginosa</i>	Black Currawong
	<i>Strepera versicolor arguta</i>	Grey Currawong (Clinking)
	<i>Tadorna tadornoides</i>	Australian Shelduck
	<i>Thinornis rubricollis</i>	Hooded Plover
	<i>Vanellus miles novaehollandiae</i>	Masked Lapwing
	<i>Vanellus tricolor</i>	Banded Lapwing
	<i>Zosterops lateralis lateralis</i>	Silvereye
Reptiles	<i>Niveoscincus ocellatus</i>	Ocellated Skink
	<i>Niveoscincus pretiosus</i>	Tasmanian Tree Skink
Freshwater fish	<i>Anguilla australis</i>	Short-finned Eel
	<i>Prototroctes maraena</i>	Australian Grayling
	<i>Galaxias fontanus</i>	Swan Galaxias