

# Vanishing Vegetation of Far North Queensland

## Mabi (5b) Forest

Produced by the Mabi Forest Working Group  
January 2000 - 2<sup>nd</sup> Edition October 2001

### **Mabi Forest**

Rainforest is an all-encompassing term for what is a highly variable ecosystem. In north Queensland, rain forest plant communities change their appearance and species composition in reaction to variations in soil type, drainage, climate (including cyclones), and altitude. These changes influence the composition of the fauna which inhabit these different types of forest. Soil type, drainage, climate and altitude also influence human use of the landscape. As the most productive lands in the best climates are cleared first, forest types in these areas are especially at risk.

### **Mabi Forest – What is it?**

Mabi Forest, also known as Complex Notophyll Vine Forest (or Type 5b), once covered the Atherton Tablelands area north and west of Malanda, occurring only on fertile basalt (red) soils in areas where rainfall is between 1300 and 1600mm. This forest type is now almost entirely within the Atherton Shire. It was originally classified in the 1960's by ecologists Len Webb and Geoff Tracey, based on its physical (structural) characteristics and species composition, using the Tolga Scrub as the basis for this description.

These structural characteristics include:

- Many buttressed canopy trees up to 45m, with an uneven canopy
- A very well developed shrub layer one to three metres high
- Presence of scattered, often deciduous and semi-evergreen trees
- Tendency for heavy leaf fall in times of moisture stress
- Stem diameters are uneven
- Epiphytes and generally uncommon and orchids are rare.

Widespread clearing of Mabi Forest has resulted in 3 plant species, the Pink Silk Oak, Atherton Sauropus and Atherton Turkey Bush being listed as 'vulnerable to extinction'. Four plants are listed as 'rare', the pink leaf Haplostichanthus, Coorangooloo Quandong, Red Penda and Gary's Cryptolepis.

A list of the main plant species found in Mabi Forest can be found in the back of this booklet.

### **Historical**

Because of the volcanic activity associated with occurrence of the type, Mabi Forest is quite young in ecological time. Volcanic activity in the area dates from 2 million years ago in the Pliocene Period to as little as 20,000 years ago, in the Pleistocene Period. As the basalt rocks from these eruptions cooled and eroded to form the rich soils of today, Mabi Forest colonised the area.

Prior to European settlement Mabi Forest was inhabited by peoples from the Ngadjonji and Yidinyji tribes whose forest 'country' contained many plant and animal foods, and basalt rock used in local axe making. Swords, boomerangs, yam and clap sticks, spears, rafts, fire sticks and blankets were constructed from trees in the forest. The area had deep spiritual

significance for these tribes whose oral legends include stories of the eruption of volcanoes such as the twin vents at Hallorans Hill and Bones Knob, between which the towns of Atherton is located. Black Bean, Black Pine and Hairy Walnut fruits were detoxified to provide the basic starch foods utilised by humans throughout the world. Names of the towns of Yungaburra (janggaburru) and Kairi (giri) are taken from the Yidinyji language.

Europeans appeared soon after Dalrymple's 1873 expedition, and began logging the forest, firstly for Red Cedar and then other prized timbers such as Black Bean, Northern Silver Ash, White Beech and Kauri Pine. By 1900 Red Cedar accounted for 75% of Queensland's total export earnings and such was the concern for the depletion of the Red Cedar resource, Cedar seedlings were dug up from Tolga Scrub and re-planted at Wongabel State Forest. Many of these seedlings are now large, well established trees.

Following the removal of the quality timber from their selections, new settlers began clearing and burning the forest for agriculture. Successful dairying, maize and tobacco farms were established and many Chinese people commenced market gardening on the rich, well drained soils. Post World War 1, soldier settlement schemes introduced many more dairy farmers and by the 1930's, a large percentage of Mabi Forest had been cleared. Agricultural pursuits continue strongly today, traditional maize, peanuts and potato crops now supplemented by sugar cane, fruit/ nut crops and ti-tree.

## **Fauna**

Mabi Forest draws its name from the local aboriginal name for Lumholtz's Tree-Kangaroo (mabi or mapi), one of the most common large mammals in this forest type. Predominantly a leaf eater, this rare species is most abundant on the Atherton Tablelands where it is restricted to rainforests and adjacent wet sclerophyll (Eucalyptus) forest. This abundance is most likely related to climate, and the relatively high nutritional value of plant foliage in forests growing on these very fertile soils.

Other rare or threatened Mabi Forest mammals include the Large-Eared Horseshoe Bat, the Diadem Leaf Nosed Bat and the Green Ringtail Possum. The Musky Rat-kangaroo is now extinct within Mabi Forest.

There are 114 species of birds known to reside, nest or forage in Mabi Forest with the largest concentration at Wongabel State Forest. Twelve of the thirteen bird species occurring only in the Wet Tropics region are found in Mabi Forest including the Tooth-billed Bowerbird, Victoria's Riflebird, Atherton Scrubwren, Chowchilla and Lesser Sooty Owl. Many Mabi Forest birds play key roles in seed dispersal and pollination, as do the Spectacled and Little Red Flying-foxes which also use Mabi Forest. Whilst there is an exceptional diversity of birds within this forest type, Chowchillas are now found only in the block at Wongabel, and the Southern Cassowary is now extinct within Mabi Forest.

A variety of reptiles and amphibians have been recorded from Mabi Forests including the primitive, dinosaur like Boyd's Forest Dragon. This species is also restricted to the Wet Tropics.

Lists of mammals, birds, reptiles and amphibians recorded from Mabi Forest can be found at the back of this publication.

## **Current Situation**

Since European settlement, Mabi Forest has been extensively cleared and fragmented and now only around 2% of the original forest remains. The largest fragments exist at, and adjacent to, Curtain Fig and Wongabel State Forest, Hallorans Hill Conservation Park, Picnic Crossing and Tolga Scrub Reserves, with smaller remnant patches on agricultural land. These remnants suffer from invasion by feral and domestic animals, weeds, and the effects of isolation. Weeds are an especially serious threat and aggressive garden escapees such as Turbina and Madiera vines, Japanese Sunflower and Anzac Weed commonly choke forest blocks are subject to edge effects and changes in the forest microclimate, which can have damaging effects on native flora and fauna.

Clearing and fragmentation has had serious consequences. The Southern Cassowary and Musky Rat Kangaroo played important roles in seed dispersal and the long-term effects of their loss are unknown. The isolation faced by many remnants restricts the ability of birds and mammals to undertake seed dispersal and pollination and many seeds are either not dispersed or are eaten by native and introduced seed predators such as the Black Rat. With so much of the original forest and its inhabitants gone, this is likely to have serious long-term implication for the genetic variability of some species, and their long-term ability to resist extinction in all but the largest reserves. Considering these large reserves total only 540ha (around the size of 5 local beef properties), with only five hectares in National Park, the future of this ecosystem is in doubt.

Because less than 2% of the original Mabi Forest remains it has been classified as an “endangered” plant community by the Environmental Protection Agency (EPA) / Queensland Parks and Wildlife Service (QPWS).

## **Rescue Actions**

Existing remnants are ‘repair manuals’ providing important clues about the original ecosystem and are a focal point to start the rescue process, providing both a seed source and the dispersers (birds, mammals) to move these seeds around the landscape. Expanding remnants builds more forest and is an ideal way to establish buffers and reduce edge effects. Connecting isolated remnants with continuous corridors or ‘stepping stones’ provides additional fauna habitat, and more cover for juveniles to disperse and establish new territories.

Weed control in and around existing fragments is very important and is an ideal way to promote the natural recovery of a vegetation remnant and expand the area of Mabi Forest. Once weeds have been eradicated some areas may be able to naturally regenerate, however weeds must be regularly controlled or re-invasion will occur. Rehabilitation by replanting herbs, trees and shrubs offers the opportunity to reverse a number of the effects of clearing and fragmentation. A list of Mabi Forest species suitable for use in rehabilitation plantings is available in “Repairing the Rainforest – Theory and Practice of Rainforest Re-establishment in north Queensland’s Wet Tropics” available from the Wet Tropics Management Authority. Information about weed control and revegetation techniques is available from offices of the Queensland Parks and Wildlife Service and Department of Natural Resources listed below.

Management of existing Mabi Forest and securing its long-term future requires a cooperative effort between government agencies, landholders, indigenous people and the community. Remnant protection and the establishment of corridors and stepping stones on private land means a joint commitment by many parties. Participation in the process is essential if the long-term future of Mabi Forest is to be assured.

## What can you do?

You can assist by getting involved in the recovery of Mabi Forest.

- Don't dump garden refuse on the edges of Mabi remnants.
- Talk to your local, State and Federal representatives about more resources to assist in Mabi Forest recovery.
- Talk to friends and neighbours who may have Mabi remnants on their properties.
- Consider joining a Landcare or Community Nature Conservation group such as TREAT (Trees for the Evelyn and Atherton Tablelands Inc.) or the Tree Kangaroo and Mammal Group (TKMG Inc).
- Visit Mabi Forest and learn more about what makes it so different, and so vulnerable.

## Mabi Forest Plant List

### Emergent / Canopy Trees

Red Tulip Oak	<i>Argyrodendron peralatum</i>
Black Bean	<i>Castanospermum australe</i>
Floppy-leaf Ash	<i>Flindersia schottiana</i>
Red Cedar	<i>Toona ciliata</i>
Small Leaf Fig	<i>Ficus obliqua</i>
Superb Fig	<i>Ficus superba</i>
Flame Silky Oak	<i>Alloxylon flammeum</i>
Silver Quandong	<i>Elaeocarpus angustifolius</i>
Milky Pine	<i>Alstonia scholaris</i>
Boonjie Tulip Oak	<i>Argyrodendron</i> sp.
Queensland Vitex	<i>Viticipremna queenslandica</i>

### Canopy Trees

Rockingham Candlenut	<i>Aleurites rockinghamensis</i>
Queensland Maple	<i>Flindersia brayleyana</i>
Northern Laurel	<i>Cryptocarya hypospodia</i>
Fraser's Fig	<i>Ficus fraseri</i>
Coorangooloo Quandong	<i>Elaeocarpus coorangooloo</i>
Brown Bollywood	<i>Litsea leefeana</i>
Pink Poplar	<i>Euroschinus falcata</i>
Damson	<i>Terminalia sericocarpa</i>
White Cedar	<i>Melia azedarach</i>
Northern Rose Walnut	<i>Endiandra cowleyana</i>
Northern Tamarind	<i>Diploglottis diphylostegia</i>
Silky Celtis	<i>Celtis paniculata</i>
Incensewood	<i>Anthocarapa nitidula</i>
Trumpet Satinash	<i>Acmenosperma claviflorum</i>
Yellow Mahogany	<i>Dysoxylum parasiticum</i>
Flame Kurrajong	<i>Brachychiton acerifolius</i>

### Subcanopy Trees

Lemon Aspen	<i>Acronychia acidula</i>
Brown Tamarind	<i>Castanospora alphandii</i>
Grey Handlewood	<i>Apananthe philippinensis</i>
Bumpy Satinash	<i>Syzygium cormiflorum</i>
Velvet Leaf Bollywood	<i>Neolitsea dealbata</i>
Brass's Bollywood	<i>Neolitsea brassii</i>

Australian Nutmeg  
Hairy Walnut  
Murray's Laurel  
Mackinnon's Laurel  
Bujarra

*Myristica insipida*  
*Endiandra insignis*  
*Cryptocarya murrayi*  
*Cryptocarya mackinnoniana*  
*Aglaia sapindina*

### **Understorey Trees**

Red Boat Tree  
Rusty Bujarra  
Iron Malletwood  
Bitter Seed Fontainea  
Cherry Beech  
Finger Cherry  
Atherton Lignum  
Hill's Lignum  
Septic Fig  
Scented Phaleria

*Neisosperma poweri*  
*Aglaia tomentosa*  
*Rhodamnia sessiliflora*  
*Fontainea picrosperma*  
*Ternstroemia cherryi*  
*Rhodomyrtus macrocarpa*  
*Austromyrtus* sp.  
*Austromyrtus hillii*  
*Ficus septica*  
*Phaleria clerodendron*

### **Shrub and Scrambling Vine Layer**

Atherton Turkey Bush  
Papuan Dichapetalum  
Dwarf Phaleria  
Moluccan Codiaeum  
Atherton Sauropus  
Green Mackinlaya  
Fish Tail Lawyer Vine

*Hodgkinsonia frutescens*  
*Dichapetalum papuanum*  
*Phaleria octandra*  
*Codiaeum variegatum* var *moluccanum*  
*Sauropus macranthus*  
*Macklinlaya macrosciadea*  
*Calamus caryotoides*

### **Large Lianes**

Black's Bloodvine  
Papuan Dichapetalum  
New Holland Pepper  
Cockspur Vine  
Native Grape  
Silver Hair Cayratia  
Millaa Millaa Vine  
Bentham's Tylophora  
Brown Sugar Vine

*Austrosteenisia blackii*  
*Dichapetalum papuanum*  
*Piper novae-hollandiae*  
*Maclura cochinchinensis*  
*Cissus antarctica*  
*Cayratia saponaria*  
*Elaeagnus triflora*  
*Tylophora benthamii*  
*Melodinus australis*

### **Slender Vines**

Malaisia Vine  
Gray's Cryptolepis  
Fish Tail Lawyer Vine  
New Mitre Vine  
Shiny Barbwire Vine

*Malaisia scandens*  
*Cryptolepis grayi*  
*Calamus caryotoides*  
*Nealsomitra trifoliolata*  
*Smilax calophylla*

### **Groundferns**

Rough Maidenhair Fern  
Dwarf Sickie Fern

*Adiantum hispidulum*  
*Pallaea falcata* var *nana*

### **Orchids**

Broadleaf Ground Orchid

*Malaxis latifolia*

## Herbs

Cunjevoi	<i>Allocasia brisbanensis</i>
Blue Ginger	<i>Alpinia caerulea</i>
Modest Ginger	<i>Alpinia modesta</i>
Large Leaf Pollia	<i>Pollia macrophylla</i>
Crispate Pollia	<i>Pollia crispata</i>
Gympie Stinging Bush	<i>Dendrocnide moroides</i>
Cordate Stinging Bush	<i>Dendrocnide cordata</i>
Tropical Stinging Nettle	<i>Urtica incisa</i>
Mirus Sedge	<i>Cyperus misus</i>
Burmann's Rainforest Grass	<i>Oplismenus burmanii</i>
Hairy Leaf Rainforest Grass	<i>Oplismenus hirtellus sp hirtellus</i>
Long Leaf Rainforest Grass	<i>Oplismenus aemulus</i>
Pointed Leaf Rainforest Grass	<i>Cyrtococcum oxyphyllum</i>
Floor Flower	<i>Pseuderanthemum variabile</i>

## Epiphytes

Keeled Crow's Nest Fern	<i>Asplenium australasicum</i>
Elkhorn Fern	<i>Platycterium bifurcatum</i>
Staghorn Fern	<i>Platycterium superbum</i>
Basket Fern	<i>Drynaria rigidula</i>

## Pioneer Species

Philippine Kamala	<i>Mallotus philippensis</i>
White Cedar	<i>Melia azedarach</i>
Velvet Leaf Bollywood	<i>Neolitsea dealbata</i>
Brass's Bollywood	<i>Neolitsea brassii</i>
Wooly Kamala	<i>Mallotus mollissimus</i>
Tye Bush	<i>Wikstroemia indica</i>
Glossy Leaf Breynia	<i>Breynia stipitata</i>

## Riparian Mabi Forest

Many above mentioned species	
Smooth Bark Kauri Pine	<i>Agathis robusta</i>
Woolly-fruited Mischocarp	<i>Mischocarpus lachnocarpus</i>
Smith's Lillipilli	<i>Acmena smithii</i>
Creek Satinash	<i>Syzygium australe</i>
Red Leaf Fig	<i>Ficus congesta</i>
Drooping Bottlebrush	<i>Callistemon viminalis</i>

## Mabi Forest Mammal List

### Monotremes

Short-beaked Echidna	<i>Tachyglossus aculeatus</i>
----------------------	-------------------------------

### Marsupials

Dasyurids

Yellow-footed Antechinus     *Antechinus flavipes*

#### Bandicoots

Long-nosed Bandicoot     *Perameles nasuta*  
Northern Brown Bandicoot     *Isoodon macrourus*

#### Possums

Coppery Brushtail Possum     *Trichosurus vulpecula*  
Striped Possum     *Dactylopsila trivirgata*  
Green Ringtail Possum     *Pseudochirops archeri*  
Lemuroid Ringtail     *Hemibelideus lemuroides*  
Herbert River Ringtail     *Pseudochirulus herbertensis*

#### Macropods

Musky Rat-kangaroo     *Hypsiprymnodon moschatus*  
Lumholtz's Tree-kangaroo     *Dendrolagus lumholtzi*  
Red-legged Pademelon     *Thylogale stigmatica*

#### Placentals

##### Rodents

Water Rat     *Hydromys chrysogaster*  
Fawn-footed Melomys     *Melomys cervinipes*  
Bush Rat     *Rattus fuscipes*  
Cape York Rat     *Rattus leucopus*  
Giant White-tailed Rat     *Uromys caudimaculatus*  
Black Rat     *Rattus rattus*  
Canefield Rat     *Rattus sordidus*

##### Bats

Little Red Flying-fox     *Pteropus scapulatus*  
Spectacled Flying-fox     *Pteropus conspicillatus*  
Common Bentwing-bat     *Miniopterus schreibersii*  
Little Bentwing-bat     *Miniopterus australis*  
Northern Long-eared Bat     *Nyctophilus bifax*

### **Mabi Forest Bird List**

Southern Cassowary ♣	Shining Bronze-Cuckoo
Australian Brush-turkey	Little Bronze-Cuckoo
Orange-footed Scrubfowl	Common Koel
Pacific Baza	Channel-billed Cuckoo
Square-tailed Kite	Rufous Owl
Black Kite	Barking Owl
Whistling Kite	Southern Boobook
Brown Goshawk	Lesser Sooty Owl ◆
Grey Goshawk	Masked Owl
Collared Sparrowhawk	Barn Owl
Wedge-tailed Eagle	Tawny Frog mouth
Australian Hobby	Papuan Frogmouth

Peregrine Falcon  
Nankeen Kestrel  
Red-necked Crake  
Bush-hen  
White-headed Pigeon  
Brown Cuckoo-Dove  
Emerald Dove  
Wompoo Fruit-Dove  
Superb Fruit-Dove  
Rose-crowned Fruit-Dove  
Topknot Pigeon  
Red-tailed Black-Cockatoo  
Sulphur-crested Cockatoo  
Rainbow Lorikeet  
Scaly-breasted Lorikeet  
Double-eyed Fig-Parrot  
Australian King-Parrot  
Crimson Rosella  
Oriental Cuckoo  
Brush Cuckoo  
Fan-tailed Cuckoo

Noisy Friarbird  
Blue-faced Honeyeater  
Macleay's Honeyeater ♦  
Lewin's Honeyeater  
Bridled Honeyeater ♦  
Brown Honeyeater  
White-cheeked Honeyeater  
Eastern Spinebill  
Dusky Honeyeater  
Scarlet Honeyeater  
Pale-yellow Robin  
Grey-headed Robin ♦  
Chowchilla ♦  
Eastern Whipbird  
Golden Whistler  
Rufous Whistler  
Little Shrike-thrush  
Bower's Shrike-thrush ♦  
Yellow-breasted Boatbill  
Black-faced Monarch  
Spectacled Monarch  
White-eared Monarch  
Pied Monarch ♦  
Leaden Flycatcher  
Satin Flycatcher

Large-tailed Nightjar  
Australian Owlet-nightjar  
White-rumped Swiftlet  
White-throated Needletail  
Fork-tailed Swift  
Azure Kingfisher  
Little Kingfisher  
Buff-breasted Paradise-Kingfisher  
Laughing Kookaburra  
Rainbow Bee-eater  
Dollarbird  
White-throated Treecreeper  
Spotted Pardalote  
Yellow-throated Scrubwren  
White-browed Scrubwren  
Atherton Scrubwren ♦  
Large-billed Scrubwren  
Brown Gerygone  
Fairy Gerygone  
Mountain Thornbill ♦  
Helmeted Friarbird

Rufous Fantail  
Grey Fantail  
Spangled Drongo  
Barred Cuckoo-shrike  
Cicadabird  
Varied Triller  
Olive-backed Oriole  
Figbird  
Black Butcherbird  
Pied Butcherbird  
Pied Currawong  
Victoria's Riflebird ♦  
Torresian Crow  
Spotted Catbird  
Tooth-billed Bowerbird ♦  
Golden Bowerbird ♦  
Satin Bowerbird  
Red-browed Finch  
Yellow-bellied Sunbird  
Mistletoebird  
Welcome Swallow  
Tree Martin  
Fairy Martin  
Silvereye  
Metallic Starling

- ♦ **Wet Tropics endemic species**
- ⊕ **Now extinct from Mabi Forest**



## **Mabi Forest Amphibian List**

Stoney Creek Frog	<i>Litoria lesueri</i>
Brown-striped Frog	<i>Limnodynastes peronii</i>
Orange-eyed Treefrog	<i>Litoria xanthomera</i>
Northern Barred Frog	<i>Mixophyes schevilli</i>
Striped Marsh Frog	<i>Limnodynastes peronii</i>
Ornate Nursery Frog	<i>Cophixalus ornatus</i>

## **Mabi Forest Reptile List**

Chameleon Gecko	<i>Carphodactylus laevis</i>
Northern Leaf-tailed Gecko	<i>Saltorius cornatus</i>
Boyd's Forest Dragon	<i>Hypsilurus boydii</i>
Red-throated Skink	<i>Carlia rubrigularis</i>
Prickly Skink	<i>Gnypetoscincus queenslandiae</i>
Skink	<i>Lampropholis coggeri</i>
Skink	<i>Lampropholis robertsi</i>
Skink	<i>Saproscincus basiliscus</i>
Skink	<i>Saproscincus tetradactylus</i>
Skink	<i>Eulamprus tigrinus</i>
Skink	<i>Glaphymorphus fuscicaudus</i>
Common Tree Snake	<i>Dendrelaphis punctulata</i>
Brown Tree Snake	<i>Boiga irregularis</i>
Amethystine Python	<i>Morelia kinghorni</i>
Carpet Python	<i>Morelia spilota</i>
Rough-Scaled Snake	<i>Tropidechis carinatus</i>

This booklet was prepared using the joint resources of:

*Queensland Parks and Wildlife Service*

*Trees for the Evelyn and Atherton Tablelands (TREAT)*

*Tree Kangaroo and Mammal Group Inc*

*Mr WT Cooper*

*Department of Natural Resources*

*Birds Australia*

*Wet Tropics Management Authority*

*Atherton Shire Council*

And with support from:

*The Natural Heritage Trust*