

## MVG 1—RAINFORESTS AND VINE THICKETS

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- Closed forests characterised by dense foliage in the upper layers (> 70% foliage cover).
  - Adapted to regenerating in low light conditions.
  - Not dependent on fire for successional regeneration and contain a large diversity of species.
  - Rainforests occur with emergent eucalypts in certain situations (e.g. the tall open forests of Victoria and Tasmania).
  - Vines, epiphytes and mosses form a conspicuous and important element of the structure in the tropical and subtropical rainforests.
- Cover a diverse range of vegetation types—from deciduous, cool temperate, southern beech forests in Tasmania dominated by only one or two canopy species, to the species-rich tropical complex mesophyll vine forests in the Wet Tropics of Queensland where no one species dominates the canopy and hundreds of species may be found. Between these two extreme types lies a series of warm temperate and subtropical forests and vine thicket communities, stretching northwards from Victoria to Cape York Peninsula. Isolated patches also occur in the Kimberley region of Western Australia.



Photo: M. Fagg

Lowland rainforest, lower slopes of Mt Bellenden Ker, Qld

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- The considerable variation in structure and species composition resulting from the range of environments from northern to southern Australia has been detailed in Specht and Specht (1999).
- Semi-evergreen vine thickets of the Brigalow Belt and the monsoonal vine thickets are found on the eastern coast in the transitional zone between the coast and semi-arid areas and in the seasonal tropics of northern Australia.
- Extent of the rainforests and vine thickets vary from a few hectares in sheltered gullies to mosaics with Eucalypt Tall Open Forests (MVG 2) covering hundreds of square kilometres.

### Facts and figures

<b>Major Vegetation Group</b>	MVG 1—Rainforests and Vine Thickets
<b>Major Vegetation Subgroups (number of NVIS descriptions)</b>	Cool temperate rainforest (54) Tropical or sub-tropical rainforest (283) Dry rainforest or vine thickets (91)
<b>Typical NVIS structural formations</b>	Closed forest (low, mid and tall) Closed palmland (low, mid) Closed vineland (low, mid) Shrubland (low, tall)
<b>Number of IBRA regions</b>	36
<b>Most extensive in IBRA region (Est. pre-1750 and present)</b>	Est. pre-1750 and Present: Wet Tropics (Qld)
<b>Estimated pre-1750 extent (km<sup>2</sup>)</b>	53 469
<b>Present extent (km<sup>2</sup>)</b>	35 200
<b>Area protected (km<sup>2</sup>)</b>	19 151

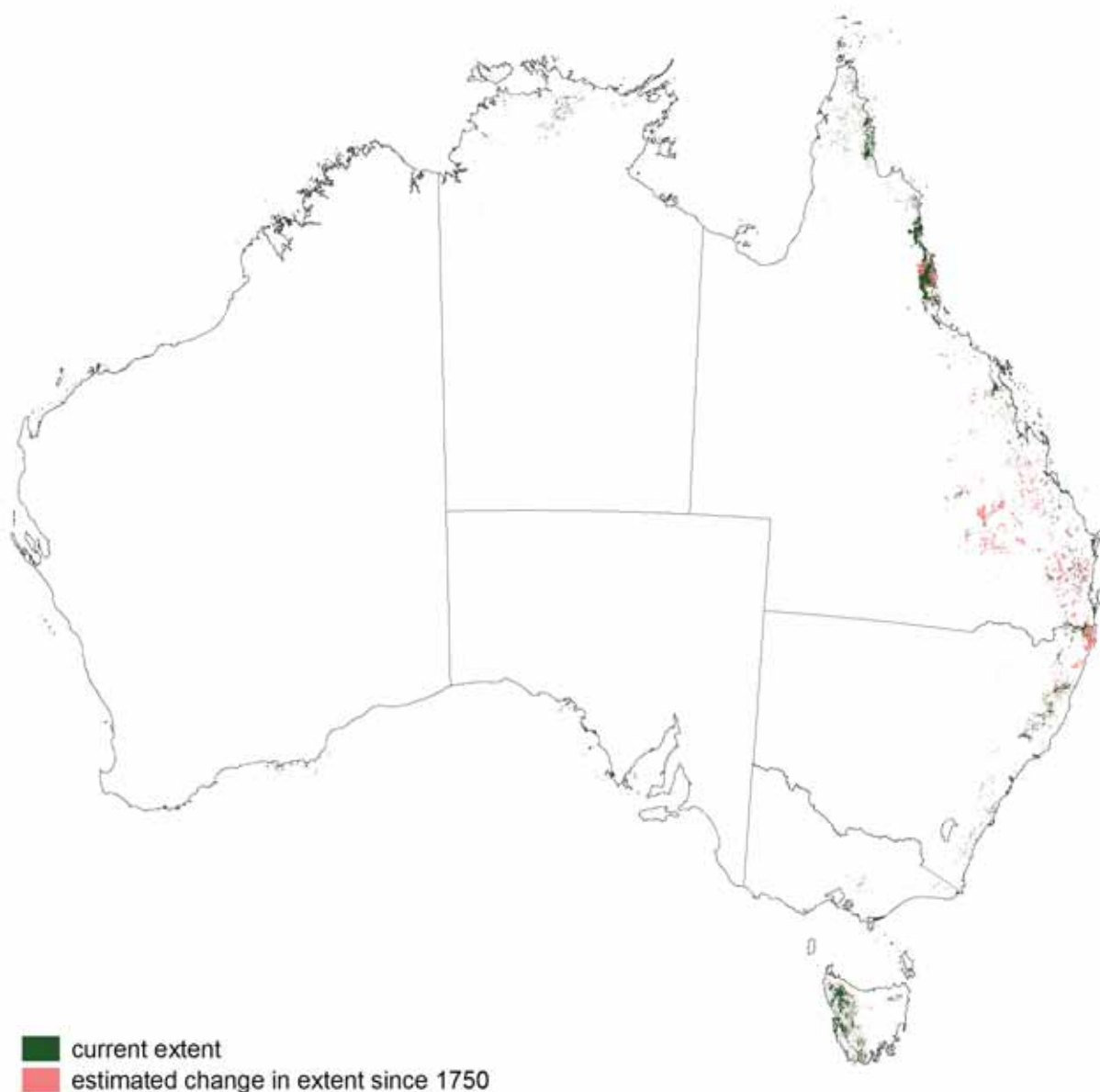


Photo: C. Slatyer

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### Geography

- Mostly confined to the wetter areas or climatic refuges in eastern Australia.
- Largest area is in Queensland (19 909 km<sup>2</sup>).
- Rainforests occur mainly in areas receiving more than 1200 mm of rainfall from cool temperate to warm temperate, subtropical and tropical areas in Queensland, New South Wales, Victoria, Tasmania and small patches in north coastal Northern Territory and the Kimberley region in Western Australia.
- Rainforests are found from sea level to high altitudes, normally within 100 km of the coast.



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### Change

- Most lowland areas have been cleared. About 34% of the estimated pre-1750 extent has been cleared across Australia, accounting for 1.8% of total clearing.
- Approximately 18 000 km<sup>2</sup> cleared since European settlement including rainforest communities in the coastal lowlands, floodplains and more undulating sections of the coastal ranges of eastern Australia. These were some of the first native vegetation communities to be harvested for timber, particularly along coastal rivers as these were used to gain access and transport timber out for export.
- The most extensive areas of cool temperate rainforest are found in western Tasmania, particularly in the north-west. Smaller areas are also found in favourable elevated sites in eastern Victoria and a few small climatic refuges along the Great Dividing Range to the MacPherson Ranges in south-east Queensland.
- Extensive areas of vine thickets, notably the softwood scrubs in the Brigalow Belt of Queensland and north-western New South Wales, have been substantially cleared for agriculture or grazing as part of brigalow land development.

Notable examples of the tropical and subtropical rainforests cleared for timber, dairying or agriculture are:

- the ‘Big Scrub’ in northern New South Wales, reduced from an estimated 75 000 ha to just 300 ha by 1900 (Floyd, 1987);
- the Illawarra rainforests;
- the hoop pine scrubs of south-east Queensland (Young and McDonald, 1987); and
- the tropical rainforests of the Atherton and Eungella Tablelands and coastal Wet Tropics floodplains of the Daintree, Barron, Johnstone, Tully–Murray, Herbert, Proserpine and Pioneer rivers
- Other effects are evident from changes in fire regimes (e.g. upslope of intensive agriculture and inundation, such as water supply and hydro-electric dams).
- The broad range of communities across Australia found within this MVG masks the level of regional depletion of some rainforest and vine thicket types.
- The main threat to rainforests is the potential for regular or intense wildfires that are able to break the dense cover of foliage that is critical for preserving available moisture and which maintains a suitable local environment for regeneration and persistence of some rainforest and vine thicket species. Other threats include clearing, diseases, weeds and pests.

### Tenure

Much of Australia’s remaining rainforest occurs within national parks and state forests.

<b>New South Wales:</b>	protected areas, state forests; little on freehold land
<b>Northern Territory:</b>	most on freehold and leasehold land; some in protected areas
<b>Queensland:</b>	protected areas, state forests, some freehold and leasehold land, many isolated areas on freehold land
<b>Tasmania:</b>	protected areas, state forests, vacant crown land
<b>Victoria:</b>	protected areas, state forests and limited areas of freehold land
<b>Western Australia:</b>	mainly in Aboriginal reserves

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### Key values

- Some of the richest and most biodiverse plant communities in Australia.
- Remnant populations of a wide range of vertebrate and invertebrate species.
- Timber (e.g. high value cabinet timbers).
- Ancient and evolutionary significance.
- Reservoirs of genetic diversity.
- Ecosystem function including a role as refuges from fire and climatic change for flora and fauna.
- Aesthetic values and ecotourism including bushwalking, boardwalks, wilderness experiences in more remote areas of Tasmania and Queensland, and tree-top walks.

Rainforests and vine thickets attract a large interest from the wider community and tourists, possibly as a result of the cultural values associated with evergreen species.

Many icon areas remain paramount to the Australian community as examples of rainforest (e.g. Daintree, Washpool, Gordon below Franklin). In some areas the rainforests have been re-established (e.g. Wet Tropics Tree Planting Scheme).

Growth in recent ecotourism has led to a greater awareness of the need to manage these systems to allow both opportunities for ready access and protection of tourist values. Their value for Indigenous communities, forestry, conservation and tourism have been recognised through the recent joint Commonwealth and States data collation and review process associated with the Regional Forest Agreements.

The restricted extent of rainforests and protection of associated endangered species is significant in these areas since they are either naturally geographically restricted in area or have become restricted through fragmentation of rainforest or vine thicket areas.

### Management considerations

- Clearing/edge effects.
- Maintenance of local hydrological conditions (e.g. stream flows).
- Wildlife corridor re-establishment between remnants.
- Isolation and faunal barriers caused by roads/powerlines.
- Tourist/visitor management (e.g. raised walkways).
- Fire (e.g. from surrounding land uses).
- Disease.
- Weeds.
- Exclusion of stock.

### References

- Australian Surveying and Land Information Group (1990) *Atlas of Australian Resources. Volume 6 Vegetation*. AUSMAP, Department of Administrative Services, Canberra, 64pp. & 2 maps.
- Beadle N.C.W. (1981) *The Vegetation of Australia*. Cambridge Univ. Press, Cambridge, 690pp.
- Floyd A.G. (1987) The status of rainforests in northern New South Wales. In *The Rainforest Legacy, Australian National Rainforest Study, vol. 1*. Australian Heritage Commission, AGPS Canberra.
- Specht R.L. and Specht A. (1999) Australian Plant Communities. *Dynamics of Structure, Growth and Biodiversity*. Oxford University Press, 492pp.
- National Land & Water Resources Audit (2001) *Australian Native Vegetation Assessment 2001*. National Land & Water Resources Audit, Canberra, 332pp.
- Young P.A.R. and McDonald W.J.F (1987) The distribution, composition and status of rainforests in southern Queensland. In *The Rainforest Legacy, Australian National Rainforest Study, vol. 1*. Australian Heritage Commission, AGPS Canberra.

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### Data sources

Interim Biogeographic Regionalisation for Australia (IBRA), Version 6.1.

National Vegetation Information System, Version 3.0.

1996/97 Land Use of Australia, Version 2.

Collaborative Australian Protected Areas Database—CAPAD 2004—Terrestrial.

### Notes

- See the [Introduction to the MVG fact sheets](#) for further background on this series



Photo: M. Fiegg

Rainforest—*Atherosperma moschatum* and *Dicksonia antarctica*, Mount Field National Park, Tas.