



NVIS Fact sheet MVG 11 – Eucalypt open woodlands

Australia's native vegetation is a rich and fundamental element of our natural heritage. It binds and nourishes our ancient soils; shelters and sustains wildlife, protects streams, wetlands, estuaries, and coastlines; and absorbs carbon dioxide while emitting oxygen. The National Vegetation Information System (NVIS) has been developed and maintained by all Australian governments to provide a national picture that captures and explains the broad diversity of our native vegetation.

This is part of a series of fact sheets which the Australian Government developed based on NVIS Version 4.2 data to provide detailed descriptions of the major vegetation groups (MVGs) and other MVG types. The series is comprised of a fact sheet for each of the 25 MVGs to inform their use by planners and policy makers. An additional eight MVGs are available outlining other MVG types.

For more information on these fact sheets, including its limitations and caveats related to its use, please see: 'Introduction to the Major Vegetation Group (MVG) fact sheets'.

Overview

Typically, vegetation areas classified under MVG 11 – Eucalypt open woodlands:

- are characterised by broad spacing with <20 per cent crown cover (<10 per cent foliage projective cover) between canopy trees often resulting in a parkland appearance with a prominent ground layer
- comprise overstoreys dominated by drought-tolerant eucalypts close to the arid limits of trees
- feature understoreys characterised by xeromorphic plants that vary between depositional and upland landforms
- occur in a central band across semi-arid Australia from Western Australia to western New South Wales
- are replaced by MVGs 5 and 12 in more humid climates

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- are prone to occasional fires in upland areas
- are used primarily for broad-scale pastoralism.

(Banner Photo) *Eucalyptus orgadophila* (mountain coolabah) open woodland, north of Hughenden, Qld (Photo: M. Fagg)

Facts and figures

Major Vegetation Group	MVG 11 - Eucalypt open woodlands
Major Vegetation Subgroups	18. Eucalyptus low open woodlands with hummock grass
	19. Eucalyptus low open woodlands with tussock grass
	47. Eucalyptus open woodlands with shrubby understorey
	48. Eucalyptus open woodlands with a grassy understorey
	53. Eucalyptus low open woodlands with a shrubby understorey
	56. Eucalyptus (+/-) low open woodlands with a chenopod or samphire understorey
Typical NVIS structural formations	Open woodland (mid, low)
Number of IBRA regions	70
Most extensive in IBRA region	Mount Isa Inlier (Qld, NT)
(Est. pre-1750 and present)	
Estimated pre-1750 extent (km2)	527 273
Present extent (km2)	464 230
Area protected (km2)	45 483



Eucalyptus largiflorens (black box) open woodland, western NSW (Photo: B. Pellow)

Structure and physiognomy

- Dominated by a sparse overstorey of eucalypts typically with less than 20 per cent canopy cover (<10 per cent foliage projective cover); canopy six – 15 m tall.
- Tree canopies are composed of sclerophyllous, vertically oriented notophyll (20 45 cm2) to mesophyll (45 150 cm2) foliage.
- In upland open woodlands, the understorey typically comprises an open layer of xeromorphic shrubs with hummock or tussock grasses and ephemeral forbs. In depositional plains and channels, the understorey includes tussock grasses and chenopod shrubs and forbs that vary in cover with rains and floods.

Indicative flora

- Species composition varies with landform and rainfall seasonality. Variation in understorey structure and species reflects the range of climatic zones and site conditions supporting these open woodlands.
- Dominated by box eucalypts in depositional zones that retain subsoil moisture and upland sites in higher rainfall areas. In contrast bloodwood eucalypts (genus *Corymbia*) and snappy gums dominate dry upland sites.
- Dominant species in tropical Australia include *Corymbia dichromophloia, Eucalyptus tetrodonta* (Darwin stringybark), *E. miniata* (Darwin woollybutt), *C. terminalis* (desert bloodwood), *E. pruinosa* (silver box), *E. brevifolia* (northern white gum) and *E. victrix* (smooth-barked coolibah). Co-dominants may include *Acacia, Ventilago, Callitris* and *Casuarina/Allocasuarina* in the inland areas.

- The understorey varies from shrubs, heaths, tussock grasses and hummock grasses. Species of *Acacia*, *Eremophila* and *Dodonaea* are common shrubs on uplands and peneplains, while chenopod shrubs and forbs may occur on depositional areas. Tussock grasses associated with this MVG include *Sorghum*, *Heteropogon*, *Chrysopogon*, *Bothriochloa*, *Aristida*, *Themeda* and *Austrostipa*.
- Hummock grass understoreys are restricted largely to central Queensland, the Kimberley in Western Australia and central Northern Territory, supporting a range of Eucalyptus species over a *Triodia* and/or a *Plectrachne* understorey.
- In South Australia the group includes *E. leucoxylon* (yellow gum) and *E. camaldulensis* (river red gum).
 In New South Wales the group includes the sparser communities of *E. camaldulensis* (river red gum), *E. largiflorens* (black box), *E. coolabah* (coolibah) and *E. populnea* (bimble box).
- In south-west Western Australia species may include *E. salmonophloia* (salmon gum), *E. loxophleba* (York gum) and E. wandoo.

Environment

- Occur in warm arid climates where mean annual rainfall is generally in the range of 200 – 450 mm, at the limit of eucalypt distribution, except where run-on enhances soil moisture in drier locations.
- Soils range from clay loams on ephemeral semi-arid floodplains to sandy loams on rocky uplands or outcrops.
- Occasionally fire prone, especially in tropical latitudes and uplands, but rarely fire prone on arid floodplains.



Eucalyptus Crebra (narrow-leaved ironbark) open woodland, west of Atherton, Qld (Photo: M. Fagg)

Geography

- Extensive, particularly in the semi-arid interior and the tropics, and cover many dry inland plains and undulating landscapes (the "downs") and some rocky outcrops.
- Largely across northern and eastern Australia, with scattered occurrences across the central and Great Victoria Desert region of Western Australia.
- Largest areas are in Queensland (235 911km2) and Northern Territory (186 797 km2).

The below image outlines the location of this MVG group in Australia.

Change

- Approximately 12 per cent (63 000 km2) of the estimated pre-1750 extent cleared accounting for six per cent of total clearing in Australia, although clearing has occurred preferentially on the inland floodplains and is limited on the uplands.
- Cleared for cereal cropping and sheep grazing in the south-east and south-west of Australia and for mining in the Pilbara region of Western Australia.
- Remnant occurrences have been extensively modified. In the northern parts of Australia they have been modified by pastoral activities and changes to fire regimes. In Queensland and New South Wales pasture improvement and tree thinning have been extensively employed and the shrubby understorey has often been removed to increase pasture growth.
- Due to their presence in pastoral areas or proximity to intensive agricultural areas, fire regimes have been modified leading to many Eucalypt open woodlands being impacted by invasive species, especially aggressive introduced plant species, notably buffel grass.
- Threats include clearing for cropping, pastoral development or mining, overgrazing and altered fire regimes.



Key values

- Biodiversity at the arid limits of eucalypt woodland distribution.
- Remnant populations of a wide range of vertebrate and invertebrate species.
- Ecotourism and scenic landscapes, particularly in arid areas such as the MacDonnell, Hamersley and Flinders Ranges.
- Resources and cultural sites valued by Indigenous communities.

List of key management issues

- Control of clearing and other threats on the edges of remnants.
- Regional planning and design of mining projects.
- Fire management, particularly the effects of increased fuel loads from introduced grasses and grazing land management practices.
- Weed control.
- Total grazing pressure from domestic, feral and native animals.
- Long-term monitoring to inform future management strategies.

References

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Brooker M.I.H. and Kleinig D.A. (1994) *Field guide to Eucalypts, Volume 3, Northern Australia.* Inkata Press, Sydney, 383pp.

Hobbs R.J. and Yates C.J. eds. (2000) *Temperate Eucalypt Woodlands in Australia. Biology, conservation management and restoration.* Surrey Beatty & Sons, Sydney, 430pp.

National Land and Water Resources Audit (2001) *Australian Native Vegetation Assessment 2001*. National Land and Water Resources Audit, Canberra, 332pp.

Data sources

Interim Biogeographic Regionalisation for Australia (IBRA), Version 7.

National Vegetation Information System, Version 4.2.

Collaborative Australian Protected Areas Database – CAPAD 2014 – Terrestrial.

Notes

- Improved vegetation data has better defined the general distribution of this MVG particularly in the far west of South Australia, albeit not considering mosaics.
- This fact sheet should be read in conjunction with MVG5: Eucalypt woodlands.

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