Australian Government
Department of the Environment and Energy

NVIS Fact sheet
MVG 13 – Acacia 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 13 – Acacia open woodlands:

- are dominated by a single Acacia species, which may co-occur with other members of the genus, either in the understorey or in transitional segments of environmental gradients
- have species composition and the identity of the dominant species that vary along rainfall gradients, with substrate and to a lesser extent rainfall seasonality
- include "mulga" which dominate woodlands on stony or sandy landscapes across the arid zone and across the north-east semi-arid landscapes adjoining savanna; and "gidgee" and "myall" woodlands which occur as mean annual rainfall declines below 550 mm
- has mulga vegetation that takes on a variety of structural expressions and is consequently classified partly within MVG 6, in accordance with the Kyoto Protocol definition of forest cover in Australia (trees >two m tall and crown cover >20 per cent, foliage projective cover >10 per cent); and partly within MVG 13 where the tree canopy layer is sparser or MVG 16 where the woody dominants are not predominantly single-stemmed.

(Banner Photo) *Acacia aneura* (Mulga) open woodland over *Eragrostis eriopoda*, near Thargomindah, QLD (Photo: M Fagg)

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Facts and figures

Major Vegetation Group	MVG 13 - Acacia open woodlands
Major Vegetation Subgroups	22. Acacia (+/-) open woodlands and shrublands with chenopods 23. Acacia (+/-) open woodlands and shrublands with hummock grass 24. Acacia (+/-) open woodlands and shrublands +/- tussock grass 25. Acacia (+/-) open woodlands and shrublands with a shrubby understorey 45. Mulga (Acacia aneura) open woodlands and sparse shrublands +/- tussock grass 52. Mulga (Acacia aneura) open woodlands and sparse shrublands with hummock grass
Typical NVIS structural formations	Open woodland (mid, low)
Number of IBRA regions	53
Most extensive in IBRA region (Est.pre-1750 and present)	Great Victoria Desert (WA, SA)
Estimated pre-1750 extent (km2)	394 885
Present extent (km2)	382 729
Area protected (km2)	43 659

Myall open woodlands (*Acacia pendula*), western NSW (Photo: B. Pellow)

Structure and physiognomy

- Woodland structure varies from five – 20 m tall with canopy cover 10 – 30 per cent along the regional rainfall gradient and with local soil moisture gradients between rises and depressions.
- Open woodlands are distinguished from shrublands (MVG 16) by the predominantly single-stemmed growth form of the woody dominants.
- Typically the structure of this MVG comprises a canopy dominated by *Acacia* species, a smaller shrub layer and a ground layer of perennial grasses, forbs and ephemeral species.
- Canopy emergents, where present, include scattered eucalypts and casuarinas.
- Leaves of the dominant layer vary from microphyll phyllodes or leaves (2.5 – 20 cm2) to nanophyll phyllodinous needles (0.25 – 2.5 cm2).
- Understoreys may include open layers of shrubs with typically sparse ground layers of tussock or hummock grasses and forbs that vary depending on canopy cover, rainfall and substrate.

Indicative flora

- A single species of *Acacia* typically dominates, but may co-occur with other members of the genus as sub-dominants or occasionally co-dominants.
- Dominant *acacias* include *Acacia aneura* (mulga), *A. georginae* (Georgina gidgee), *A. tephrina* (boree), *A. cambagei* (gidgee), *A. harpophylla* (brigalow), *A. peuce* (waddy) and *A. papyrocarpa* (western myall). The most widespread species is mulga (*A. aneura*).
- The vegetation group has been broadly sub-divided into Mulga (*Acacia aneura*), and Other *Acacias*, such as *A. harpophylla*, *A. cambagei*, *A. ramulosa* and threatened Myall (*A. pendula*) communities. These communities may also present in MVGs 6 and 16.
- Shrubs may co-occur in some communities but are typically sparse.
- Communities are further characterised by chenopod, tussock grass, hummock grass and shrubby understoreys.
  - Shrubby understoreys typically include genera *Atalaya*, *Dodonaea*, *Eremophila*, *Grevillea*, *Hakea* and *Senna*, as well as other *Acacia* species.
  - Chenopod genera may include *Atriplex*, *Chenopodium*, *Enchylaena*, *Maireana*, *Rhagodia* and *Sclerolaena*.
  - Tussock understoreys include *Aristida*, *Astrebla*, *Enneapogon*, *Enteropogon*, *Eragrostis*, *Paspalidium* and *Sporobolus* and *Austrostipa*.
  - Hummocks are mainly Triodia species.
- Species dominance and composition are generally associated with substrate and climate.

Environment

- Occurs largely within the 150 - 550 mm annual rainfall range across arid and semi-arid areas of Australia.
- The climatic conditions are generally dry, hot summers with cool to warm winters. Rainfall is variable although maximum falls are either in summer (northern) or in winter (southern).
- Occur on a range of contrasting substrates.

Tropical eucalypt woodlands, Kakadu National Park, NT (Photo: B. Pellow).

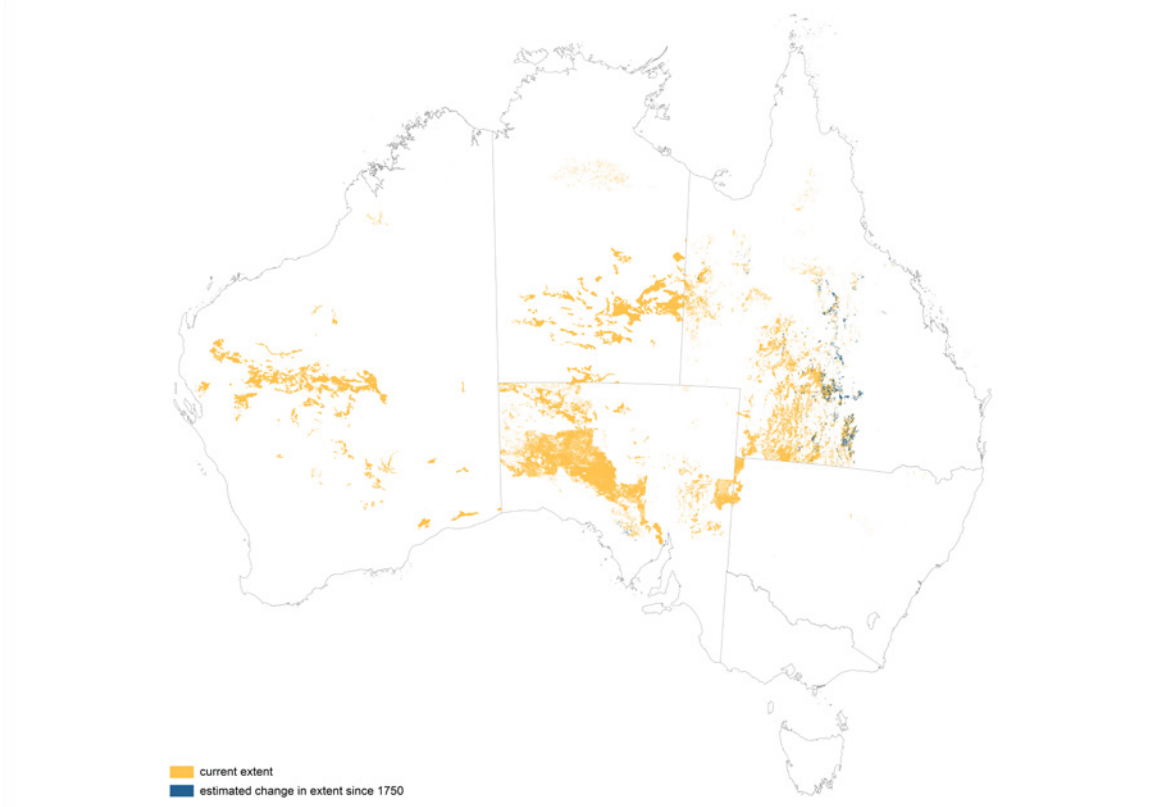
Geography

- Dominates large areas of semi-arid and arid Australia particularly Western Australia, the Northern Territory, South Australia, Queensland and New South Wales.
- Largely occur on extensive undulating plains and downs, low hills and valleys of the rangelands.
- Largest areas occur in the South Australia (146 727 km2) and Queensland (99 470 km2).

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

Change

- Approximately three per cent (12 000 km2) of the estimated pre-1750 extent cleared accounting for 1.2 per cent of total clearing in Australia, mainly as a result of pastoral activities.
- Modified by clearing for pastoral activities, change in local drainage systems, increased local grazing pressure by providing stock watering, an overall increase in grazing through the introduction and spread of feral animals.
- High levels of grazing in Myall woodlands has led to the replacement of chenopod shrubs and tall perennial tussock grasses with short perennial grasses and unpalatable annual herbs, as well as introduction of exotic herbs and grasses such as *Bromus spp.*, *Erodium spp.*, *Lepidium africanum*, *Medicago spp.*, *Sisymbrium spp.* and *Trifolium spp.* Introduced shrubs, notably *Lycium ferocissimum* (African boxthorn) have also invaded some areas occupied by this community.
- Less than 30 per cent of Myall woodland remains in New South Wales with much of the clearing taking place during droughts to provide emergency stock food.
- Extensive invasion of Buffel grass (*Cenchrus ciliatus*) across arid and semi-arid parts of Queensland and Northern Territory is making *Acacia* woodlands more regularly prone to fires, threatening the persistence of trees and shrubs.
- Overgrazing by cattle and feral vertebrates has degraded extensive areas of Gidgee and Mulga woodlands, resulting in a lack of regeneration, soil compaction and erosion, reduction of woody debris, as well as disruption of grove-intergrove patterns critical to water movement, resource capture and landscape function.
- Foremost threats are over-grazing (including cattle, sheep and feral animals) and changes to fire regimes.



Key values

- Biodiversity, several endangered ecological communities and species are known from temperate regions of this MVG.
- Maintenance of landscape function and soil productivity.
- Remnant populations of a wide range of vertebrate and invertebrate species.
- Pastoral production.

List of key management issues

- Grazing pressure from both domestic stock and feral animals. Trampling and grazing by large herbivores has a number of impacts.
- Interactions between stocking rates and drought cycles, implementing pastoral management systems that avoid cumulative legacies of soil degradation caused by sustained overgrazing into successive drought episodes.
- Location and access to artificial watering points, which are associated with intensification of herbivore activity and associated impacts.
- Control of introduced grasses on pastoral lands to limit their influence on fire regimes and native groundcover.
- Fire regimes, recognising that some introduced grasses such as *Cenchrus ciliaris* (buffel grass) burn with greater intensity than native pasture grasses, thereby altering regeneration responses of trees and shrubs.
- Indirect effects of climate change.
- Feral animals including pigs, goats, cats and foxes.
- Long-term monitoring to inform future management strategies.

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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

- This fact sheet should be read in conjunction with MVG 6: Acacia forests and woodlands.

Gidgee woodlands (*Acacia cambagei*) near Coopers Creek, Innamincka, SA (Photo: M. Fagg)