Australian Government
Department of the Environment and Energy

NVIS Fact sheet
MVG 7 – Callitris forests and 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 7 – Callitris forests and woodlands:

- comprise pure stands of *Callitris* that are restricted and generally occur in the semi-arid regions of Australia
- in most cases *Callitris* species are a co-dominant or occasional species in other vegetation groups, particularly eucalypt woodlands and forests in temperate semi-arid and sub-humid climates. After disturbance, *Callitris* may regenerate in high densities and become a dominant member of a mixed canopy layer. Some of these modified communities are mapped as *Callitris* forests or woodlands
- are generally dominated by a herbaceous understorey with only a few shrubs
- in New South Wales *Callitris* has been an important forestry timber and large monocultures have been encouraged for this purpose
- comprise large areas of *Callitris glaucophylla* (white cypress pine) woodlands that occur in New South Wales and parts of South Australia
- have more open forms with crown cover <20 per cent (foliage projective cover <10 per cent) are classified within MVG 31 - Other open woodlands.

(Banner Photo) *Callitris* woodland, Tailem Bend, SA (Photo: M. Fagg)

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Facts and figures

Major Vegetation Group	MVG 7 - Callitris forests and woodlands
Major Vegetation Subgroups	12. Callitris forests and woodlands
Typical NVIS structural formations	Open forest (low, mid) Woodland (low, mid,)
Number of IBRA regions	30
Most extensive in IBRA region **(Est. pre-1750 and present)**	Cobar Peneplain (NSW)
Estimated pre-1750 extent (km²)	42 255
Present extent (km²)	34 157
Area protected (km²)	3 007

Structure and physiognomy

- Forms a canopy of *Callitris* species up to 20 m tall with crown cover >20 per cent (foliage projective cover >10 per cent), the cover of which varies greatly depending on rainfall and disturbance history.
- Understorey generally characterised by a sparse shrub layer and herbaceous or grassy ground layer, with an increasing ephemeral component in dry regions.
- Where the canopy is dense the understorey becomes very sparse.
- In Western Australia *Callitris columellaris* may become a low woodland of five m – eight m tall over thickets of *Acacia*.

Callitris glaucophylla (white cypress-pine) forest, western NSW (Photo: B. Pellow).

Indicative flora

- Callitris forests and woodlands cover a somewhat disparate suite of 'natural' assemblages on semi-arid sandhills that generally lack eucalypts, and those derived from eucalypt-dominated forests and woodlands.
- *Callitris glaucophylla* is the most widespread species In New South Wales. It may be found in 'derived' communities, often with *Callitris endlicheri* and also in 'natural' communities with *Myoporum platycarpum* and other shrubs. In Queensland, *Callitris glaucophylla* dominates the canopy in the southern bioregions, while *Callitris intratropica* dominates in more northerly locations. In Western Australia, *Callitris columellaris* may be dominants of coastal stands.
- Associated shrub species include *Acacia*, *Eremophila, Senna, Dodonaea;* chenopods such as *Atriplex, Maireana and Sclerolaena,* and tussock grasses such as *Cymbopogon*, *Eragrostis, Aristida, Chloris* and *Austrostipa.*
- Ephemeral forbs may form part of the ground layer.

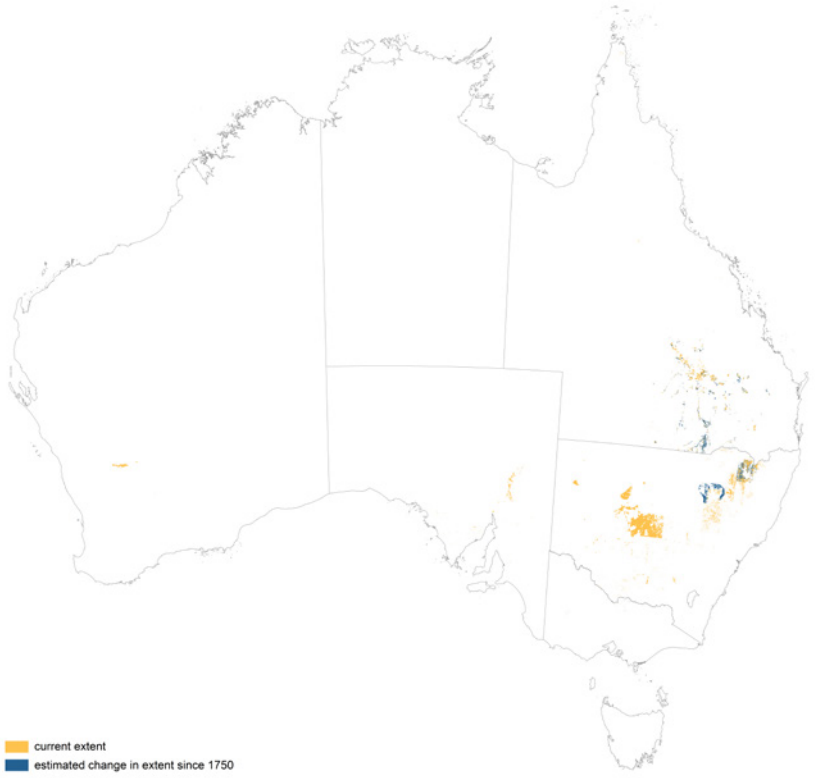
Environment

- In New South Wales, vegetation that is naturally dominated by *Callitris* occurs on sandhills on semi-arid aeolian and riverine plains.
- In eastern Australia *Callitris* vegetation derived from eucalypt forests and woodlands occurs on peneplains, Cainozoic alluvial plains and sediments derived from old alluvial levees and dunes.
- May be localised in pockets on undulating to flat land, most often in sites offering some protection from fire. An alliance with eucalypt species is more common. Other outlying populations occur on upland rocky areas protected from regular fire events.
- Occur in areas where the summers are hot and the winters are mild to warm. Rainfall is variable from 400 - 600 mm.

Geography

- Semi-arid regions of south-central Queensland and central New South Wales, with smaller patches in South Australia in the Flinders Ranges, southern New South Wales and northern Victoria. Small areas occur in the northern wheatbelt of Western Australia.
- Largest area occurs in New South Wales (26 402 km^2).

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



Change

- Approximately 19 per cent (>8 000 km2) of the estimated pre-1750 extent cleared accounting for 0.8 per cent of total clearing in Australia.
- Forest stands have been modified by selective logging for timber since the early days of settlement (e.g. cypress pine was used in the nineteenth century to build homes for the European settlers in areas such as Rosedale and Sandy Creek in South Australia). The termite resistance of cypress pine has made it a very important flooring timber and, in the past, framing timber.
- State forests on the western slopes of New South Wales and Queensland contain extensive forest areas dominated by cypress where silvicultural and fire management practices foster its dominance over other canopy trees.
- Woodlands on sandhills in semi-arid landscapes have undergone degradation of understoreys and soils related to high total grazing pressure due to overstocking or overabundance of feral or native herbivores.
- Dominant trees and understorey species and vegetation structure may also have been affected by modified fire regimes since settlement.
- Cleared for mining activities in some localised areas.
- Recruitment and regeneration affected by total grazing pressure.

Key values

- Biodiversity.
- Remnant populations of a wide range of vertebrate and invertebrate species.
- Timber values – early settlers used Callitris for construction, now the forests provide specialty timbers.

List of key management issues

- Clearing and edge effects, especially for smaller remnants.
- Total grazing pressure management.
- Soil degradation and erosion.
- Fire regimes.
- Weed control.
- Long-term monitoring to inform future management strategies.

Callitris forests and woodlands, Warren Gorge, Flinders Ranges, South Australia (Photo: M. Fagg)

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.

Beard J.S., Beetson, G.R., Harvey J.M. Hopkins A.J.M. and Shepherd D.P. (2013) *The Vegetation of Western Australia at 1:3,000,000 Scale. Explanatory Memoir*. Second Edition. Science Division, Department of Parks and Wildlife, Western Australia.

Harris S. and Kitchener A. (2005) *From Forest to Fjaeldmark. Descriptions of Tasmania's vegetation*. Dept of Primary Industries, Water and Environment, Hobart, 432pp.

Keith D.A. (2004) *Ocean Shores to Desert Dunes. The native vegetation of New South Wales and the ACT*. Department of Environment and Conservation (NSW), Hurstville.

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

National Land and Water Resources Audit (2001b) *Landscape Health in Australia*, National Land and Water Resources Audit, Canberra, 109pp.

Neldner, V.J., Niehus, R.E., Wilson, B.A., McDonald, W.J.F. and Ford, A.J. (2014) *The Vegetation of Queensland. Descriptions of Broad Vegetation Groups*. Version 1.1. Queensland Herbarium, Department of Science, Information Technology, Innovation and the Arts.

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.