

MVG 8—CASUARINA FORESTS AND WOODLANDS

- Casuarinas are a distinctive part of the Australian landscape. The name *Casuarina* is derived from the Malay *Kasuari* and alludes to the similarity between the drooping foliage of the genus and that of the feathers of the cassowary bird (Boland et al., 1994).
- The original genus *Casuarina* has been subdivided into two genera *Casuarina* and *Allocasuarina*.
- Pure stands of casuarina (the she-oaks) are restricted in area to specific sites, such as:
 - coastal foredunes of eastern Australia, for example coast she-oak (*C. equisetifolia*);
 - fringes of flow lines or in swamps, for example grey she-oak (*C. glauca*), Western Australia swamp she-oak (*C. obesa*), river oak (*C. cunninghamiana*); or
 - rock outcrops, for example *A. huegeliana* on granitic soils and near outcrops in Western Australia.
- Large areas of *A. decaisneana* (desert oak) open woodlands occur in arid Northern Territory, Western Australia and South Australia.



Photo: T. Rosling

Allocasuarina decaisneana (desert oak) low open woodland, south west of Alice Springs, NT

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Facts and figures

Major Vegetation Group	MMVG 8—Casuarina Forests and Woodlands
Major Vegetation Subgroups (number of NVIS descriptions)	Casuarina and Allocasuarina forests and woodlands (214) Allocasuarina woodland and open woodland with hummock grass (12)
Typical NVIS structural formations	Open forest (tall, mid, low) Woodland (tall, mid, low) Open woodland (mid, low)
Number of IBRA regions	57
Most extensive in IBRA region	Est. pre-1750 and present: Great Sandy Desert
Estimated pre-1750 extent (km²)	166 303
Present extent (km²)	149 262
Area protected (km²)	27 561

Species

Typical species in inland areas include belah (*C. cristata*), drooping she-oak (*A. verticillata*), desert oak (*A. decaisneana*) and river she-oak (*C. cunninghamiana*). Coast she-oak (*C. equisetifolia*) can also occur in association with coastal banksias along the south-east and eastern seaboard in less exposed sites.

Australian Capital Territory

C. cunninghamiana (river oak).

New South Wales

C. cristata, *C. cunninghamiana*, *C. glauca* (swamp oak), *C. pauper*, *A. luehmannii* (buloke), *A. verticillata*, *A. littoralis*.

Northern Territory

A. decaisneana, *C. equisetifolia*.

Queensland

A. luehmannii, *C. cristata*, *C. equisetifolia*, *A. torulosa* (forest oak), *A. littoralis*, *C. cunninghamiana*, *C. glauca*.

South Australia

A. verticillata, *C. pauper*, *A. decaisneana*, *A. luehmannii*.

Tasmania

A. verticillata, *A. littoralis*.

Victoria

C. pauper and/or *A. luehmannii*, *A. verticillata*.

Western Australia

C. cristata, *A. huegeliana*, *A. decaisneana*, *C. obesa*.

Geography

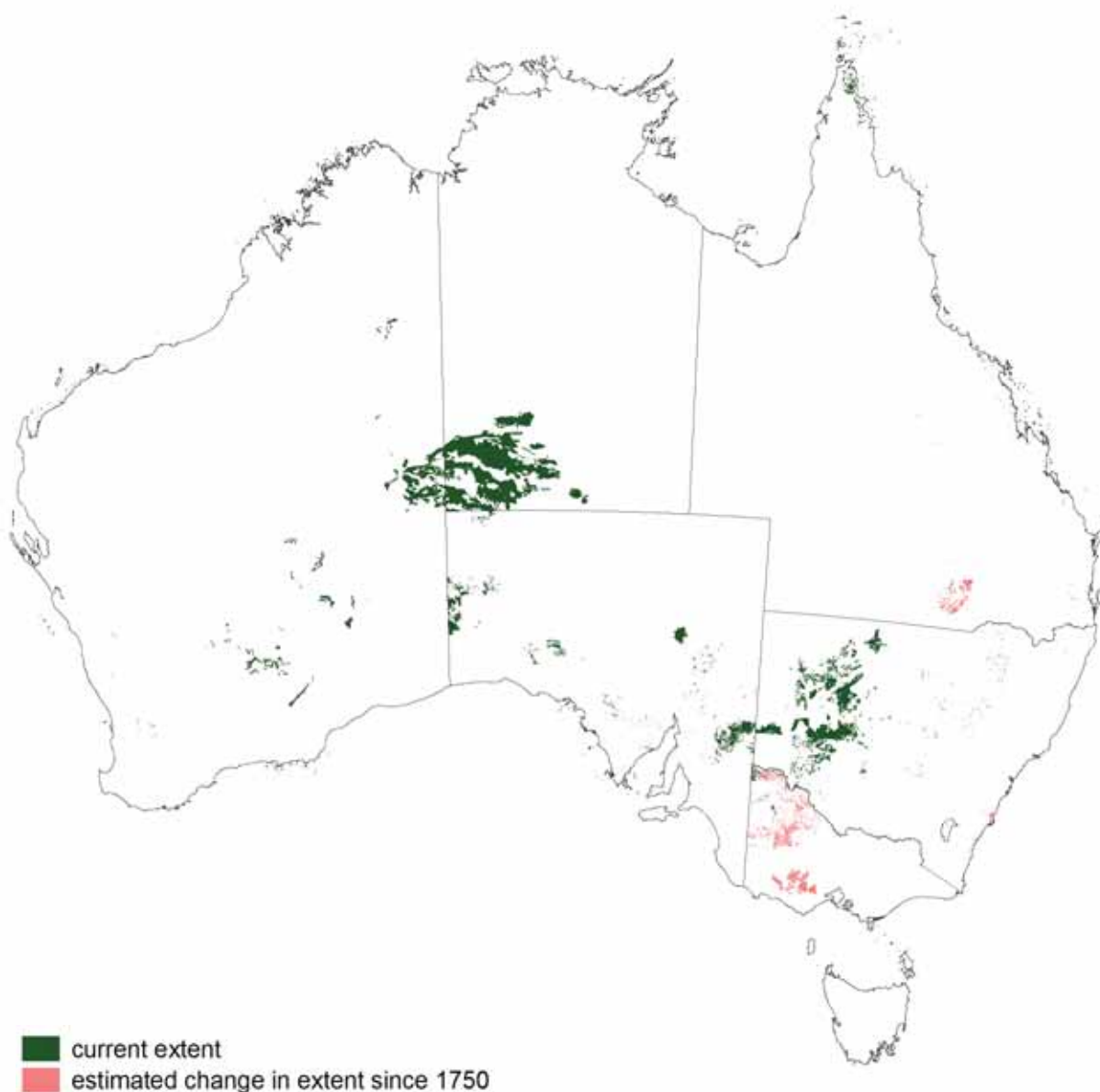
- Primarily occur on littoral and riverbank sites along the south-eastern, eastern and northern coast of Australia and on rocky sites throughout the continent.
- Found in association with acacia and eucalypts in other inland areas.
- The largest distribution is in the Northern Territory (66 429 km²).

Change

- Approximately 10% of the estimated pre-1750 extent cleared accounting for 1.7% of total clearing in Australia.
- Approximately 17 000 km² cleared since European settlement.
- Modified by selective logging for timber, (including specialist timber uses of species such as *A. fraseriana* in Western Australia and *A. torulosa* (forest oak) for shingles and shakes in eastern Australia.
- Other areas have been modified by sheep and cattle grazing.

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- Species and communities may also have been affected by changed fire regimes. Reports suggest an increase in some she-oak species at the expense of other co-dominants in regularly burnt areas.
- Due to the limited size many areas still remain intact, although some have been modified for sheep and cattle grazing and some have been cleared for urban land uses.
- Casuarina vegetation communities associated with extreme sites (e.g. swamps or outcrops) have been relatively protected from interference and many occur within conservation areas.
- Some communities in the Casuarina Forests and Woodlands occurring along creek-lines and water-courses in areas affected by dryland salinity. These have been further impacted by increased waterlogging and salinity as a result of clearing and fragmentation of landscapes. In some localised areas the forests and woodlands have also been cleared for mining activities.
- Threats to these restricted-site communities include rising watertables and dryland salinity in temperate Australia, and coastal development affecting wetland and supratidal forests of *C. glauca*.



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Tenure

Casuarina Forests and Woodlands occur on a wide range of tenures.

Australian Capital Territory:	leasehold land
New South Wales:	mostly leasehold land, some freehold land and protected areas
Northern Territory:	mostly protected areas and leasehold
Queensland:	freehold land, some leasehold land, small areas protected or in state forests
South Australia:	protected areas, leasehold land and some freehold land
Tasmania:	freehold land
Victoria:	protected areas
Western Australia:	protected areas, leasehold land, other crown land and some reserved crown land

Key values

- Biodiversity including variation in species associated with the different plant communities.
- Remnants support a wide range of vertebrate and invertebrate species.
- Coastal ecology as a part of estuarine and brackish wetland systems.
- Specialty timbers.

The wood of most casuarinas is very hard and therefore provides excellent fuel. *C. equisetifolia*

is reputed to be the best fuel wood in the world as it is relatively smokeless when it burns. Branchlets are used as fodder for stock during drought.

Management considerations

- Clearing and edge effects.
- Changes to fire regime (e.g. from surrounding land uses).
- Weed control.



Casuarina cristata spp. *pauper* woodland, Carrawinya National Park, Qld

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- Changes to coastal ecology and tide regimes.
- Management of casuarina along creek lines, watercourses and swamps provides challenges in many parts of Australia as salinity concentrations and groundwater levels increase.

References

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Beadle N.C.W. (1981) *The Vegetation of Australia*. Cambridge Univ. Press, Cambridge, 690pp.

Boland D.J., Brooker M.I.H., Chippendale G.M., Hall N., Hyland B.P.M., Johnston R.D., Kleinig D.A. and Turner J.D. (1994) *Forest Trees of Australia*. CSIRO Publishing, Collingwood, Australia.

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

Data sources

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

Land Tenure in Australia's Rangelands (1955 to 2000), National Land and Water Resources Audit.

National Vegetation Information System, Version 3.0.

1996/97 Land Use of Australia, Version 2.

Collaborative Australian Protected Areas Database—CAPAD 2004—Terrestrial.

Notes

- Large areas were identified in the Northern Territory and Western Australia arising from improved NVIS data.
- New data were provided to NVIS covering the mallee region of Victoria.
- Stunted forms of *Casuarina* and *Allocasuarina* may be associated with other species of similar growth form in Heathlands (MVG 18).
- See the [Introduction to the MVG fact sheets](#) for further background on this series.



Photo: M. Fyfe

Allocasuarina decaisneana (desert oak) woodland, Canning Stock Route, WA