

MVG 23—MANGROVES

- Mangroves occur as tall forests through to shrublands in the intertidal zone along those parts of the coast subject to low wave energy. Mangroves are subject to periodic inundation by seawater. The zonation of species is related to the extent and severity of soil waterlogging and salinity, which, in turn, are influenced by the frequency of inundation by sea water and freshwater seepage.
- Mangrove species ensure their survival in this environment with a range of remarkable adaptations including salt tolerance (halophytes), the presence of pneumatophores (aerial roots which resemble fingers or limbs growing upwards from sediments and assist the tree in obtaining oxygen in its anaerobic substrate) and seeds germinating on the tree before dispersal.
- The species richness of mangroves declines with increasing latitude. Over thirty species in north Queensland gradually declines to only one species (the grey mangrove—*Avicennia marina*) in Victoria, South Australia and southern Western Australia. Mangroves do not occur in Tasmania. The height of mangrove communities also decreases with increasing distance from the equator.



Photo: M. Williams and DEW

Mangroves, Jervis Bay, ACT

MVG 23—MANGROVES

Facts and figures

Major Vegetation Group	MVG 23—Mangroves
Major Vegetation Subgroups (number of NVIS descriptions)	Mangroves (60)
Typical NVIS structural formations	Low closed forest Open forest (mid, low) Low woodland Tall shrubland Tall open shrubland
Number of IBRA regions	28
Most extensive in IBRA region	Est. pre-1750 and present: Cape York Peninsula (Qld)
Estimated pre-1750 extent (km²)	9 664
Present extent (km²)	9 325
Area protected (km²)	3 087



Rhizophora stylosa (red mangrove), Cape Tribulation, Qld

MVG 23—MANGROVES

Species

Mangroves are dominated by trees and/or shrubs of the following species.

Northern Territory

Rhizophora stylosa (red mangrove), *Ceriops tagal* (yellow-leaved spurred mangrove), *Excoecaria ovalis*, *Sonneratia alba* (mangrove apple), *Avicennia marina*, *Lumnitzera recemosa* (a black mangrove).

Northern Queensland

A. marina, *C. tagal*, *Rhizophora stylosa*, *E. agallocha* (blind-your eye mangrove), *Pemphis acidula* (tea shrub), *Bruguiera gymnorhiza* (large-leafed orange mangrove), *Lumnitzera* spp.

Western Australia

A. marina, *B. exaristata*, *B. gymnorhiza*, *C. tagal*, *L. racemosa*.



MVG 23—MANGROVES

South-east Queensland

A. marina, *Aegiceras corniculatum* (river mangrove),
B. gymnorhiza.

New South Wales

Ae. corniculatum, *A. marina*.

Victoria

A. marina subsp. *australasica*.

South Australia

A. marina subsp. *marina*.

Tasmania

A. marina var. *resinifera*.

New South Wales

A. marina subsp. *australasica*, *Ae. corniculatum*.

Geography

- Mangroves are widespread although restricted to coastal environments. Australia has many mangrove communities through tropical, subtropical and temperate regions. This range is rarely seen in other countries.
- In the Northern Territory and northern Queensland, the freshwater mangrove (*Barringtonia acutangula*) occurs on the banks of rivers and estuaries. At the mapping scales used by NVIS, it is normally mapped within Melaleuca Forests and Woodlands (MVG 9).

Change

- Many of these communities are substantially in natural condition.
- Mangroves in more populated areas have been impacted by changes made to local site conditions. For example, altered hydrological conditions influencing tidal flows as well as affecting salinity levels in the upper soil profiles.
- Some have been lost through infilling and clearing for urbanisation, port works and industrial areas near coastal and estuarine areas or modified through changing nutrient and sediment regimes.
- Generally these communities have increased as a result of clearing of near-coastal land and the increased sediment loads on estuaries allowing mangroves to colonise what were previously sand spits.

- There has been a major change in how some of these areas have been recognised through planning strategies and conservation. The latter includes fisheries habitat protection controls in most states and territories.

Key values

- Coastal and estuarine ecology and fisheries habitat.
- Biodiversity including a variety of species and communities.
- Ecotourism including boardwalks and guided fishing tours.

Mangroves are home to a wide range of birds and mammals, including some rare and endangered species and also provide a breeding ground for many estuarine and marine species.

Management considerations

- Protection of the areas from in-filling, pollution, aquaculture and urbanisation.
- Hydrological changes, including changes to currents, tidal regimes, waterlogging and salinity.

References

- Adam, P. (1994) Saltmarsh and mangrove. In: *Australian Vegetation* (ed. R.H. Groves) pp. 395-435. Cambridge Univ. Press, Cambridge.
- 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.
- Keith D. (2004) *Ocean Shores to Desert Dunes. The native vegetation of New South Wales and the ACT*. Dept of Environment and Conservation (NSW), Hurstville, 353pp.
- Lovelock C. (1993) *Field Guide to the Mangroves of Queensland*. Aust. Inst. Marine Science, Townsville, <<http://www.aims.gov.au/pages/reflib/fg-mangroves/pages/fgm-qld-index.html>>, accessed June 2006.
- National Land & Water Resources Audit (2001) *Australian Native Vegetation Assessment 2001*. National Land & Water Resources Audit, Canberra, 332pp.

MVG 23—MANGROVES

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

- This MVG was split from a larger MVG in NVIS 1.
- NVIS data for mangroves is incomplete for several states.
- See the [Introduction to the MVG fact sheets](#) for further background on this series.



Photo: M. Fegg

Avicennia Marina, St Kilda Beach, near Adelaide SA