Australian Government
Department of the Environment and Energy

NVIS Fact sheet
MVG 21 – Other grasslands, herblands, sedgelands and rushlands

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 21 – Other grasslands, herblands, sedgelands and rushlands:

- are dominated by non-woody or herbaceous species such as grasses, sedges, ferns or a mixture of these. The sedgelands and rushlands are often referred to as wetland communities and support a large range of species, partly as a result of their geographical range, and variation in soils and site conditions
- include many plant species capable of vegetative reproduction by rhizomes, or stolons
- can comprise associated species that may include perennial forbs or/and short-lived ephemeral plants that proliferate after seasonal or cyclonic rains, to longer-term perennials that rely on underground organs such as rhizomes
- occur on a range of sites including intermittently inundated depressions, margins of perennial freshwater lagoons and brackish tidal or inland wetlands. Ferns tend to dominate specific humid areas where the environment is less variable between seasons
- have structurally distinctive features of landscape that provide a variety of habitats for faunal species
- may be associated with an overstorey of scattered and isolated trees
- has many structurally and compositionally simple communities, with a wide range of dominant species across different subgroups
- has widespread but locally restricted distribution. As such, many occurrences are not mapped individually on broadscale maps
- provide a variety of environments that are critical for many rare and endangered species
- some are fire-prone, others not.

Turtle Lagoon, Blue Lake National Park, North Stradbroke Island, Qld (Photo: M. Fagg)

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Facts and figures

Major Vegetation Group	MVG 21 - Other grasslands, herblands, sedgelands and rushlands
Major Vegetation Subgroups (number of NVIS descriptions)	38. Wet tussock grassland with herbs, sedges or rushes, herblands or ferns 41. Saline or brackish sedgelands or grasslands 63. Sedgelands, rushes or reeds 64. Other grasslands
Typical NVIS structural formations	Sedgeland Rushland Forbland Grassland Aquatic bed Fernland (The above formations can have a wide range of covers and heights)
Number of IBRA regions	65
Most extensive in IBRA region (Est. pre-1750 and Present)	Channel Country (Qld, SA, NT and NSW)
Estimated pre-1750 extent (km^2)	52 739
Present extent (km^2)	49 630
Area protected (km^2)	12 844

Namadgi National Park, ACT

Structure and physiognomy

- Tussock or rhizomatous sedges, cord rushes, rushes, reeds or grasses are the dominant growth form, typically with a continuous canopy cover and less than two m tall.
- Often form mosaics of patches with largely monospecific dominants.
- Many of the dominant plant species have reduced leaves and photosynthetic cladodes.
- Ephemeral sedges and forbs may be abundant in ephemeral wetlands.
- Scattered shrubs or low trees may be present in some communities.
- Many plants have morphological or physiological traits to tolerate low soil oxygen availability, such as aerenchymatous (large intercellular air spaces) stems and roots, submerged or floating leaves, etc.
- Fire regimes may affect growth and in some instances rapid shifts in floristic and structural components may occur in relation to these events.

Indicative flora

- Prominent plant families include Cyperaceae, Restionaceae, Juncaceae, Poaceae, Typhaceae, Hydrocharitaceae, Potamogetonaceae, Polygonaceae, Juncaginaceae, Marsileaceae, Lemnaceae and Nymphaeaceae. Species composition varies with hydrological regime, nutrient status and salinity.
- Often associated with an overstorey of scattered and isolated trees (e.g. distribution of sedgelands in Western Australia is associated with *Eucalyptus, Acacia* and *Melaleuca* species). Other associated species can vary from the large range of short lived ephemeral plants that proliferate after seasonal or cyclonic rains to longer term perennials that rely on underground organs such as rhizomes. Although the range of species varies in their time of flowering, each tends to flower en masse which provided a colour feature in the landscape.
- Coastal and inland wetland communities include mosaics of amphibious, emergent, floating and submerged aquatic vegetation with aquatic grasses prominent. Coastal genera include grass species *Isachne, Ischaemum, Oryza, Paspalum, Pseudoraphis* and *Sporobolus* and larger emergent graminoids of *Baloskion, Baumea, Carex, Cladium, Cyperus, Fimbristylis, Lepironia* and *Schoenoplectus*. Inland species typically include a range of forbs, grasses and graminoids such as *Phragmites australis, Typha domingensis, Ludwigia peploides* and species of *Alternanthera, Azolla, Eleocharis, Isoetopsis, Juncus, Mimulus, Myriophyllum, Marsilea, Nymphoides* and *Persicaria*. *Eragrostis australasica* dominates simple communities on ephemeral clay pans. Aquatic forbs include species of *Alisma, Azolla, Persicaria, Philydrum, Lemna* and *Spirodela*, with species of *Nelumbo, Nymphaea, Nymphoides* and *Utricularia* characteristic of tropical floodplains.
- Saline or brackish sedgelands are closely associated with coastal saltmarshes (within MVG 22), and often form fine-scale mosaics. These are dominated by relatively few species including *Juncus kraussii, Baumea juncea, Bolboschoenus caldwellii, Phragmites australis* and *Typha species*.
- Sedgeland, rush or reed communities including Mires, are dominated mostly by sclerophyllous species of Cyperaceae and Restionaceae. Mires usually have a conspicuous sclerophyll shrub component that distinguishes them from other communities within MVG 21. Common genera of sedges (Cyperaceae) and cord rushes (Restionaceae) include *Chorizandra, Gahnia, Gymnoschoenus, Lepidosperma, Schoenus, Baloskion, Empodisma, Lepyrodia* and, *Leptocarpus*. Characteristic sclerophyll shrubs include species of *Bauera, Banksia, Callistemon, Epacris, Leptospermum, Melaleuca, Sprengelia* and *Xanthorrhoea*. Forbs include species of *Drosera, Gonocarpus* and *Goodenia*. Species of *Sphagnum,* peat-forming mosses, may be prominent in some mires in cooler climates.

Environment

- Associated with locally moist conditions created by high rainfall, near-surface groundwater and seepage or run-on from catchments.
- Typically in depressions, lowland floodplains or headwater valleys where flat slopes inhibit rapid run off.
- Occur in a wide range of landscape types except steep mountainous terrain and desert sand dune fields.
- Alluvial substrates derived from a wide range of parent materials.
- Although these communities are widespread and tend to be related to specific environmental and site conditions, they are generally localised in their extent. As such, many are not mapped individually on broadscale maps and may require finer scale mapping. Nevertheless they provide a variety of environments that are critical for many rare and endangered species.

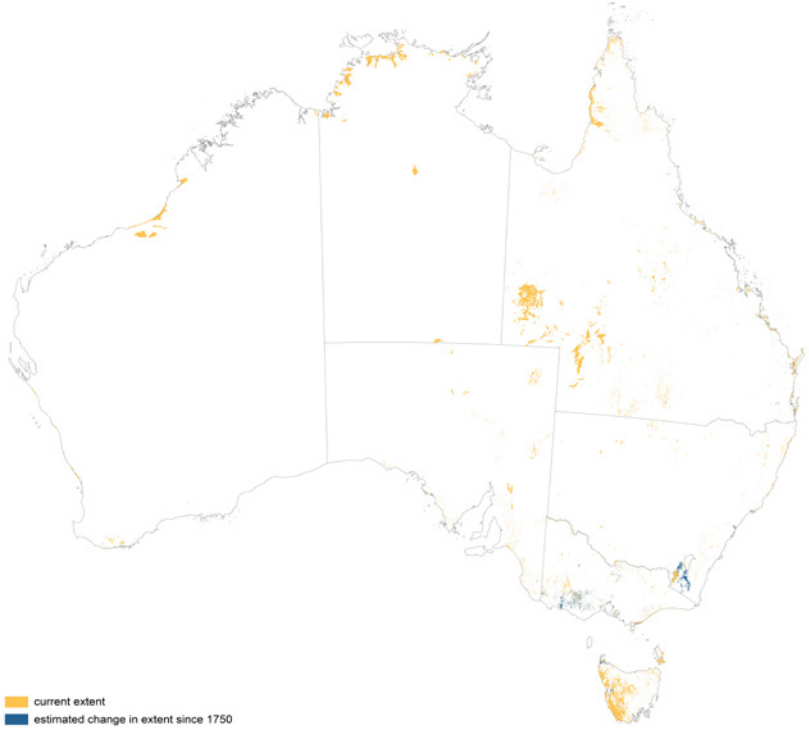
Geography

- Occur across Australia in locally moist conditions created by high rainfall, near-surface groundwater and seepage or run-on from catchments.
- Variable positions ranging from low-lying sites and floodplains to montane and exposed highlands in semi-arid to temperate areas of Australia. Extent of communities is generally very restricted in area as a result of the controlling site factors e.g. *Gahnia* sedgelands in South Australia and Victoria. Others may occur more widely e.g. *Gymnoschoenus* button grass plains in Tasmania.
- It is likely that many areas are unmapped and that the restricted and biodiverse nature of the wetland communities requires a finer scale of mapping.
- Largest area occurs in Queensland (227 731 km^2).
- Wetland communities occur on coastal floodplains, lagoons and estuaries; and on inland watercourses throughout Australia. The most extensive coastal occurrences are in the Northern Territory, Queensland and north-east New South Wales. Inland watercourses are most extensive in the Murray Darling and Lake Eyre drainage basins e.g. Macquarie Marshes, Low Bidgee wetlands and Channel Country (Diamantina River).
- This MVG may also occur as Mires (bogs and fens), within swales of coastal sandplains from Fraser Island in south-east Queensland to the south coast of New South Wales, and in depressions of coastal plateaus and the Great Dividing Range from the New England region on the New South Wales-Queensland border, south to the central Victorian Highlands and throughout much of Tasmania. Mires occur in eastern Australia where mean annual rainfall exceeds 1000 mm.

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

Change

- Approximately six per cent (3 000 km^2) of the estimated pre-1750 extent cleared, accounting for 0.3 per cent of total clearing in Australia.
- Generally, many of these communities have persisted with time as they tend to occur on extreme sites.
- Altered hydrological conditions (through both natural and anthropogenic changes), particularly damming.
- Clearing for agriculture, irrigated crops, pasture and livestock.
- Changes in fire regimes.
- Impacts from invasive species (feral animals and weeds).
- Impacts of tourism on the flora and fauna species.
- Increasing salinity.
- Eutrophication (nutrient enrichment of water bodies through natural and human induced activities).
- All types are threatened to varying degrees by changes to rainfall patterns associated with climate change.



Key values

- Landscape function and ecosystem services in maintaining consistent loads of high-quality water to rivers and estuaries.
- Biodiversity including many specialised species not represented in other Major Vegetation Groups; and critical habitat for rare and endangered species.
- Scenic landscape features.
- Environmental education and ecotourism, including bushwalking.
- These communities appear to attract tourists from a scenic landscape perspective and from the variety of flora and fauna species present. The growth in recent eco-tourism has led to a greater awareness of the need to manage these systems to allow on the one hand the opportunity to readily access these areas, whilst on the other hand protecting the very values that attract the tourists.

List of management issues

- Catchment landscape management.
- Planning for new major dams upstream of floodplains.
- Maintenance of natural hydrological regimes through environmental flows and management of water diversions and floodplain infrastructure.
- Development pressures on coastal floodplains and estuaries.
- Tourist/visitor management (e.g. raised walkways and scenic landscapes).
- Maintenance of appropriate fire regimes.
- Control of invasive plants and animals.
- Design of underground mines to minimise subsidence related risks to mires.
- Long-term monitoring to inform future management strategies.

Mire (typically comprising sedges and rushes), Newnes Plateau, NSW (D. Keith)

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