

Classifying Australia's vegetation

While there are many possible ways to classify vegetation, the system adopted for the maps in this volume combines measures of the sizes and densities of plants to give specific meanings to terms such as forest, woodland and shrubland.

As most natural vegetation has identifiable layers, or 'strata', the structural forms of the top stratum are subdivided by the most significant layer of the understorey. The vegetation types are then identified by the genus or family of the dominant species.

This composite structural-floristic classification combines the structural types attributed to Specht (1970) with the notation used by Beard and Webb (1974) for their vegetation survey of WA. It is the same basic classification used for the map Natural Vegetation in

the second series of this atlas (Carnahan 1976), but with some modifications to accommodate present vegetation. Comparable systems have been used for most of the recent small scale mapping of vegetation in Australia.

The diagram below shows how to interpret the code letters and numbers used to classify vegetation on the accompanying 1:5 million scale maps. It is important to recognise that the formal code for any mapping unit represents only a spatial generalisation as no stand of vegetation is ever entirely uniform.

The classification operates as a two-way table of eight growth form classes by four foliage cover classes, which define the principal structural forms—see the pictorial key opposite. Thus where medium height trees occur with a foliage cover of 10–30%, the vegetation is classed as woodland (**M2**). In the complete map codes the structural form of the top stratum and the growth form of the next tallest stratum with cover more than 10% are indicated, while lower case letters show the botanical type of the dominant plants. For example, **eL2Z** represents a *Eucalyptus* low woodland with an understorey of low shrubs.

Where the top stratum has a cover of less than 10%, the understorey becomes more conspicuous and is therefore also given a floristic code letter. Thus the code **eL1kZ** represents a *Eucalyptus* low open woodland over low chenopod shrubs.

Growth form is a simple description of plant structure whereby trees and shrubs are separated into several height classes. Tall shrubs (**S**) differ from low trees (**L**) in being multi-stemmed from or near the ground; where these two growth forms are mixed within a single layer the growth form is generalised as **L**. Hummock grasses, the 'spinifex' of the inland, are listed as a distinct growth form (**H**).

Herbaceous plants are divided into two groups. The first (**G**) comprises plants described as tussocky or tufted (that is having numerous erect stems or leaves arising from compact bases or from spreading rhizomes) and consists of grasses and graminoids (plants that are grass-like in form, such as sedges, but not of the family Poaceae, or grasses). It includes the native tussock grasses and graminoids, together with cereals, sugar cane, and some sown pasture grasses.

The second group (**F**) includes the forbs (herbaceous plants that are neither grasses nor grass-like in form) and the sward-forming grasses, which are not tussocky or tufted. Forbs are widespread in the native flora, and also among the pasture, crop, and weed plants of the introduced flora. The grasses and legumes in this category are creeping or spreading by nature, or else adopt this habit under grazing.

Foliage cover is expressed as 'projective foliage cover' (p.f.c.) for each stratum, and is the proportion of the ground that would be shaded if sunshine came from directly overhead—see photo above. Foliage cover differs from canopy cover, which is the proportion of ground that lies beneath the crowns of the plants, since it makes allowance for

light passing between the leaves and branches of the canopy.

The four foliage cover classes are separated at 10%, 30% and 70% p.f.c. Foliage cover class 1 is specified as less than 10%, but if the cover in any stratum is less than 1%, as in the case of relic trees on cleared paddocks, it is considered to be negligible.

Floristic codes refer to the taxonomic group (typically a family or *genus*) of the dominant plants in any stratum. They are shown for the tallest stratum, and also for the next layer in cases where the cover of the upper stratum is less than 10%. The most common tree and shrub genera are *Eucalyptus* (**e**) and *Acacia*, or 'wattle' (**w**). The native *Callitris* and the introduced *Pinus* are grouped as conifers, or 'pine' (**p**).

Shrubs and forbs of the family Chenopodiaceae, notably of the genera *Atriplex* (saltbush), *Maireana* (bluebush) and *Sclerolaena*, are treated as a floristic unit (**k**). Other plant families coded are the herbaceous Asteraceae (formerly Compositae) (**z**) and Fabaceae (**f**), specifically the introduced pasture legumes *Trifolium* and *Medicago*.

The closely related hummock grass genera *Triodia* and *Plectrachne* are treated as a floristic unit (**t**). Tussock grass genera include the native *Astrelba* (**a**), *Dichanthium* (**d**) and *Stipa* (**s**), and the introduced *Saccharum*, or sugar cane (**v**). Grass genera not treated individually make up a residual group (**y**). All the families of graminoids, notably Cyperaceae (sedges), are grouped as a floristic unit (**g**).

If two floristic types are of about equal importance in a stratum then both codes are given, for example **eb** means that *Eucalyptus* and *Banksia* are co-dominant, the first code letter suggesting the slightly more abundant type. Where it is not possible to define one or two major floristic types, the floristic component is treated as 'mixed or other' (**x**).

Some herbaceous vegetation has a strictly seasonal occurrence. Living plants are present only during an annual or sporadic growing season and such vegetation is distinguished by italicised code characters (for example *yF3*, *ws1zF*). Seasonal crops are also in this category but on the Present Vegetation map are represented by symbols, generally overlain on grassland vegetation. This reflects the widespread practice of rotation of crops with pasture. In only a few areas, such as part of the Darling Downs in south-eastern Qld, is cropland devoted solely to cropping.



Foliage cover
Looking up into the canopy of a *Eucalyptus* open forest (**eM3L**). The amount of sky blocked out by the leaves, stems and branches of this forest type averages more than 30%.

READING THE VEGETATION CODES

Upper stratum Lower stratum

wL1kZ

Example: **wL1kZ** = *Acacia* low trees, foliage cover less than 10% (Low open woodland), with an understorey of chenopod low shrubs (saltbush)

FLORISTIC CODES

(not shown for lower stratum if upper stratum foliage cover is greater than 10%)

- a** *Astrelba* (Mitchell grass)
- b** *Banksia*
- c** *Casuarina* incl. *Allocasuarina*
- d** *Dichanthium* (bluegrass)
- e** *Eucalyptus*
- f** Fabaceae (incl. clovers and medics)
- g** Graminoids
- h** *Hakea*
- k** Chenopodiaceae
- m** *Melaleuca*
- n** *Nothofagus*
- o** *Owenia* (desert walnut)
- p** Conifers
- q** *Myoporum* (sugarwood)
- r** *Heterodendrum* (rosewood)
- s** *Stipa*
- t** *Triodia* and/or *Plectrachne*
- v** *Saccharum* (sugar cane)
- w** *Acacia* incl. *Racosperma*
- x** Mixed or other
- y** Other grasses
- z** Asteraceae (daisies)

GROWTH FORM CODES

- T** Tall Trees
- M** Medium Trees
- L** Low Trees
- S** Tall Shrubs
- Z** Low Shrubs
- H** Hummock Grasses
- G** Tussocky or Tufted Grasses and Graminoids
- F** Other Herbaceous Plants

FOLIAGE COVER CODES

(only shown for upper stratum)

- 1** Less than 10%
- 2** 10–30%
- 3** 30–70%
- 4** Greater than 70%

NOTES

Underlined codes indicate interdense vegetation
Italicised codes indicate seasonal vegetation

The vegetation types shown on the two 1:5 million scale maps are illustrated here as diagrammatic cross-sections. They are arranged according to the growth form and

foliage cover of the tallest stratum, as in the map legends, but with a commonly occurring understorey superimposed to give an actual mapped example of a subtype

of each structural form. The examples illustrated are indicated by a map code shown in blue. Structural forms marked with an asterisk are not represented on

the maps because their occurrence is either too restricted to be mapped at 1:5 million scale or else not easily separated from other structural forms.