

Acacia verticillata Prickly Moses

TAXONOMY

Division	Angiosperm (flowering plant)
Subclass	Dicotyledonae (dicotyledon)
Family	MIMOSACEAE

Previous Taxonomic Name

Named *Mimosa verticillata* in 1789. Known as *Acacia verticillata* since 1806.

Taxonomic Status

Long lived woody perennial

Common Names

Prickly Moses, Prickly Mimosa (ANBG n.d.)

MORPHOLOGY

Spreading shrub or tree to 10 m high. Stipules (small leafy growths at the base of the stalk), if present, have a bristled surface. Phyllodes (flattened leaf stalks) instead of leaves clustered or whorled, alternating, needle-like, and without stalks. They are often spiny, stiff with one vein and a small inconspicuous leaf gland. Flowers are in spikes up to 4.5 cm long and cream to yellow (Maslin 2001).

This is a very complex, variable species with four subspecies currently recognised. Some of these subspecies occur in the same geographic area, and intermediates may be present (Maslin 2001).

SUBSPECIES

Acacia verticillata* ssp. *cephalantha - Needle-leaf Prickly Moses

Upright or spreading shrub or small tree, 2-10m high. Branches mostly spreading. Phyllodes in whorls, easily separate from branches, needle-like, and less than 12 mm long and 0.5 mm. Flowers always in cylindrical spikes (Maslin 2001).

Acacia verticillata* ssp. *ovoidea – Ovoid Prickly Moses

Spreading, climbing or prostrate shrub 1-2 m high, 3-4 m wide. Branches often wiry. Phyllodes clustered from a single point, or alternate, rarely in whorls, often flattened. Densely packed flowers in stalked or stalkless spikes, with rounded heads (Maslin 2001).

Acacia verticillata* ssp. *ruscifolia – Broad-leaf Prickly Moses

Spreading or upright shrub 1-10 m high. Phyllodes usually whorled, and distinctly flattened vertically, 10-20 mm long, 3-6 mm wide (barely 3 mm wide in Victoria) and pointed. Flowers in dense spikes 2-3 mm long (Maslin 2001).

Acacia verticillata* ssp. *verticillata – Prickly Moses

Upright shrub 2-5 m high. Phyllodes commonly whorled, but sometimes clustered, or very occasionally alternate, distinctly flattened vertically, less than 3 mm wide, often more than 12 mm long. Flowers always in cylindrical spikes. A variant of subspecies *verticillata* has been recorded near Sydenham and at Anakie Junction and is likely to be restricted to these sites. It has erect whorls rather than spreading phyllodes up to 25 mm long, and a spiked flowerhead. (Maslin 2001).

HYBRIDS

No known hybrids



SIMILAR SPECIES

Heath Wattle *Acacia brownii* has similar phyllodes but these are arranged at right angles to the branchlets. The flowers are deep yellow and globular (Costermans 2003). It is found in poorly drained sands and does not occur naturally in the Corangamite region.

Juniper Wattle *Acacia ulicifolia* also has similar spiny phyllodes but these are single and alternating. The flowers are pale creamy yellow and globular (Costermans 2003, Australian Plants Society Maroondah Inc 2001).

GEOGRAPHIC RANGE

Acacia verticillata

Widespread in southern and eastern Victoria. Also SA, NSW & TAS. Occurs widely across the coast from Torquay to Warrnambool as well as south and east of the Ballarat area.

Acacia verticillata ssp. *cephalantha* - evidently confined to woodlands and forests of central Victoria. One record for the Corangamite region near Lorne and one just outside of the catchment near Peterborough (FIS, May 2005). Often riparian (Maslin 2001).

Acacia verticillata ssp. *ovoidea* – mostly occurs along the southern coastal regions of Victoria including Anglesea, Apollo Bay and Port Campbell (FIS May 2005). It also found inland in the Grampians (Maslin 2001).

Acacia verticillata ssp. *ruscifolia* – primarily found in Tasmania. Similar specimens in Victoria are restricted to the Wilson's Promontory area, although they do vary from the Tasmanian plants in their narrow phyllodes and darker colour (Maslin 2001). Flora Information System information also notes limited site records in the Apollo Bay area (FIS May 2005).

Acacia verticillata ssp. *verticillata* – scattered populations in southern Victoria, mostly in damp locations from inland to the coast.

BIOREGIONS

Central Victorian Uplands
Otway Ranges

Victorian Volcanic Plain
Warrnambool Plain

Otway Plain

PLANT COMMUNITIES

Acacia verticillata and its sub-species are found in a variety of plant communities in the Corangamite catchment. These include dry forests and woodlands, riparian forests and coastal forests, heathland and scrubs.

FRAGMENTATION

Thought to be recently fragmented due to clearing of coastal areas where it often now restricted to creek lines. (Provenance workshop, Creswick 2004)

RELEVANT HISTORY & RESEARCH

Blackman et al (2005) studied morphological and physical variations of *Acacia verticillata* on the Tasman peninsula, Tasmania. The study found that *A. verticillata* on exposed coastal sites exhibited leaf succulence, while nursery trials showed significant slower growth rates compared to the same species from sheltered sites. The study suggests that this indicates genetic differentiation.

POPULATION DENSITY

Average density, 100-500 individuals - dependent on site. (Provenance workshop, Creswick 2004)

BREEDING SYSTEMS

FLOWERING

Yellow flowers, July-December (Walsh & Entwistle 1999).

POLLEN

The pollen of *Acacia* has the form of small compact and regularly arranged clusters of pollen known as a polyad with *Acacia verticillata* having 16 grains of pollen per polyad (Cookson 1953).

POLLINATION

Literature reviewed by Kenrick (2003) suggests that breeding data has shown pod set is rare in self pollination of a range of *Acacia* species. There is an apparent lack of specific data for *A. verticillata*.

POLLINATORS

Wind, Insects (Bonney 2003)

SEED

SEED DESCRIPTION

Pods linear, compressed, 2-8 cm long, 3-5 mm wide. Seed elliptic, 3-4 mm long, funicle present (Maslin 2001).
30-150 seeds/gram (GAV n.d.).
46 germinants/gram at 25°C (Gunn 2001).

SEED CROP

Collect seed December-February (GAV n.d.). Seed is released immediately or within 1-2 days after maturity has been reached (Ralph, 1993). Not a prolific seeder but reasonable quantities of seed can be collected (GAV n.d.). Wear strong gloves when collecting seed. Spreading a groundsheet under the plant and waiting for seed to drop or gently shaking the plant is recommended (GAV n.d.).

SEED DISPERSAL

Ants. Birds may also provide a role in seed dispersal (Bonney 2003).

EXTRACTION & STORAGE

If seed has been collected in pods, it must be separated. This can be achieved by placing on a tarp in direct sunlight, or rubbing pods over a sieve (Ralph 1994).
Seed should be stored in air tight containers in temperatures ranging from 3°C to 22°C (Gunn 2001).

PROPAGATION

Seed that floats is not viable (Ralph 2003).
Sow from spring-time (Bonney 2003).

TREATMENT OPTIONS

Seed needs to be heat treated or scarified before sowing (Bonney 2003; GAV n.d.)
Smoke treatment has improved the germination of some *Acacia* species (Ralph 2003).

GERMINATION TIME

Acacia seed usually germinates in 3-10 weeks and seedlings are generally fast growing (Ralph 2003).

FIELD ESTABLISHMENT

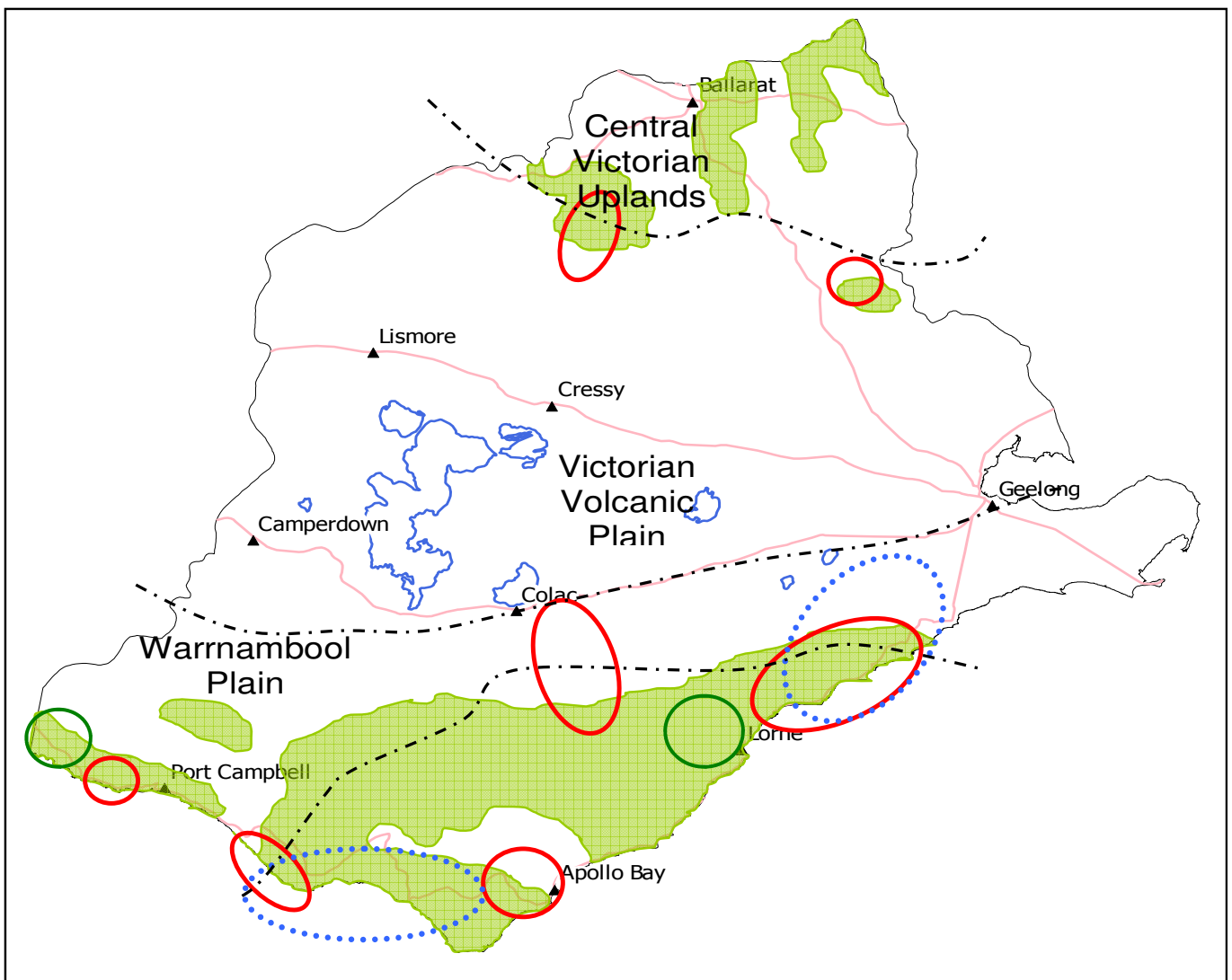
Suited to direct seeding (GAV n.d.).
Prolific regeneration from seed, particularly after fire. Will coppice (GAV n.d.).

SEED COLLECTION RANGE - *Acacia verticillata*

Narrow - within which, seed should be collected from remnant stands that are close to the revegetation project.





As a number of subspecies occur within the Corangamite catchment, it is important to adequately identify and keep collections of known subspecies separate to avoid possible cross-pollination and hybridisation. There is still much work that needs to be done to identify populations of subspecies within the region. Seed collection should focus on maintaining local genetics by collecting from at least 30–50 plants in a given population and ensuring that the varieties are not mixed. Project officers undertaking revegetation projects need to specify the variety for their area and match this against the historical and actual distribution of the species.

In light of the research by Blackman et al (2005), it could be suggested that coastal seed collections should be kept separate from those of sheltered sites. Though the research was conducted in Tasmania there is no reason to suggest that the same processes do not occur in the Corangamite region. Further provenance research is needed.



MAP: *Acacia verticillata* distribution

DATA SOURCE: DSE Flora Information System 2004, accessed April 2005

-  *Acacia verticillata* general population distribution
-  *Acacia verticillata* subsp. *verticillata* populations
-  *Acacia verticillata* subsp. *ovoidea* populations
-  *Acacia verticillata* subsp. *cephalantha* populations

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To contribute to or provide feedback on this note, please email the Corangamite Seed Supply and Revegetation Network Coordinators:

Michelle Butler, DPI
Simon Heyes, GAV

michelle.butler@dpi.vic.gov.au
simon.heyes@dpi.vic.gov.au

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