

Acacia retinodes Wirilda

TAXONOMY

Division	Angiosperm
Subclass	Dicotyledonae
Family	Mimosaceae

Previous Taxonomic Names

Acacia retinodes variety *retinodes* has been named since 1908.
Acacia retinodes variety *uncifolia* has been named since 1932.

Taxonomic Identification Number 15223 (ANH et al 2005)

Taxonomic Status

Short-lived perennial.

Common Names

Wirilda, Swamp Wattle, Silver Wattle (ANBG n.d.)

MORPHOLOGY

Shrub or small tree 5–10 m high. The branchlets are sometimes pendulous, often angled or flattened, and glabrous (not hairy).

The phyllodes (flattened leaf stalks) are straight or thinly curved, 3-22 cm long, 3-15 mm wide, sometimes with a hook at the tip, green to glaucous (blue-green with white bloom) in colour. Veins pinnate, obscure except for a prominent midrib. Gland not prominent.

18-50 flowered, light golden in colour, occasionally cream. Pods linear, to 16 cm long, 5-7 mm wide (Walsh & Entwistle 1996).

Plants from wetter sites tend to have a more open, wispy habit with more pendulous terminal branchlets compared with those from drier sites and their branchlets are more obviously angled and phyllodes more glaucous (Walsh & Entwistle 1996).

Three varieties are recognised by Maslin (2001), although other sources (ANH et al 2005; RBGM n.d.; Walsh & Entwistle 1996) recognise only two.

Acacia retinodes var. *retinodes* (swamp variant)

Shrub or tree, the crown spreading and either openly branched or dense. Bark smooth grey. Phyllodes 6-22 cm long, 3-35 mm wide, blue-green to blue-grey, often lightly covered with a waxy bloom, less crowded on branches than in "typical" variants. Glands 0-16 mm above base of phyllode. Heads yellow to golden, mostly 34-52 flowered. Pods 5-7 mm wide, often with light waxy bloom. Occurs along waterways and wetlands on damp soils. Flowers mostly spring to summer with sporadic flowering through out the year (Maslin 2001).

Tolerant of severe salinity (Bernhardt et al 1984).

Will only coppice when very young (Earl et al 2001).

Acacia retinodes var. *retinodes* (typical variant)

Small tree with furrowed, dark bark. Phyllodes shorter 3-16 cm long without a waxy bloom, pods longer 8-11 mm wide and fewer flowers than swamp variant. Flowers are pale yellow to cream, 18-30 flowers in each head in summer. Found on rocky hillsides and fertile soils away from water. Suckering habit. Occurs only in South Australia (Maslin 2001).

Acacia retinodes var. *uncifolia*

5-10 m high, often spreading by sucker and coppicing to form dense groves. Phyllodes 3-6.5 cm long, green, sharp, short hook to slightly hooked.



Flowers 18-30 per head, light golden or cream (Walsh & Entwistle 1999).

HYBRIDS

Hybrids and contamination of local gene pools are a concern where nurseries and seed collectors are distributing non-local specimens or seed for revegetation projects in place of or with indigenous *Acacia retinodes* varieties.

A. retinodes var. *retinodes* (typical variant) - Occurs only in SA (Maslin 2001) and is sometimes substituted for local variants. The coastal variant, *A. retinodes* var. *uncifolia* is sometimes substituted for the inland variety *A. retinodes* var. *retinodes* (and vice versa) even though both have distinct ranges in Victoria. Natural hybrids between the inland swamp variety and coastal variety are rare but do occur in South Australia where ranges overlap (Maslin 2001).

Acacia provincialis and *A. semiaurea* are thought to be both wattle hybrids that have involved *A. retinodes* (Maslin 2001).

SIMILAR SPECIES

NSW species *Acacia flocktoniae* and *A. mabellae* have similar phyllodes (Maslin 2001).

GEOGRAPHIC RANGE

Acacia retinodes occurs in Qld, SA, Tas and Vic. Two variants occur within Victoria.

***Acacia retinodes* var. *retinodes* (swamp variant)** - Discontinuous from the Eyre Peninsula, SA to Wilsons Promontory, mainly in poorly drained soils inland from the coast (Maslin 2001; Walsh & Entwistle 1996). All populations further west are presumed to result from plantings (Walsh & Entwistle 1996).

In the Corangamite region it occurs near Ballarat and south towards Rokewood especially along drainage lines.

Acacia retinodes* var. *uncifolia - Distribution limited to coastal dunes or near salt marsh from Geelong to Wilson's Promontory, primarily on calcareous and sandy loam soils. Also South Australia on the Eyre Peninsula and King & Flinders Islands off Tasmania (Entwistle & Walsh 1996, Maslin 2001).

BIOREGIONS

***Acacia retinodes* var. *retinodes*:** Central Victorian Uplands and Victorian Volcanic Plains near Ballarat.

***Acacia retinodes* var. *uncifolia*:** Bellarine and Geelong areas of the Otway Plain in coastal habitats.

PLANT COMMUNITIES

In Corangamite, the inland variety occurs in dry forests. The coastal variant is found on dune scrubs and salt marsh around the Geelong region.

FRAGMENTATION

Unknown

POPULATION DENSITY

Unknown

RELEVANT HISTORY & RESEARCH

Insect pollination of Australian wattles was researched by the Museum of Victoria, University of Melbourne and Monash University in the 1970's and 1980's. Pollination of both Victorian variants was studied in 1984-85.

BREEDING SYSTEMS

FLOWERING

A. retinodes* var. *retinodes - Flowers mostly October to January (Walsh & Entwistle 1996) but can flower irregularly throughout the year (Bonney 2003).

A. retinodes* var. *uncifolia - Flowers year-round, mostly October to November (Bernhardt et al 1984; Walsh & Entwistle 1999).

POLLINATION

A. retinodes* var. *uncifolia is protogynous, that is that the stigma is receptive before the anthers are shed from the same flower, and highly self-incompatible (Bernhardt et al 1984; Kenrick et al 1986). Kenrick and Williams

(1986) observed that fertilisation by self-pollination resulted in only 0.09-0.24 of that observed after outcrossing. One plant within the study population did occasionally set pods after self-fertilisation (3.1%), but all seed from these pods was found to be unviable.

POLLEN

Moderate pollen yields (Gowers 1990).

POLLINATORS

Bees have been found to be the most consistent pollinators of *A. retinodes*. The absence of floral and extra-floral nectar excludes pollinators such as marsupials and birds. (Bernhardt et al 1984; Bernhardt & Walker 1985).

A. retinodes* var. *retinodes - Bernhardt & Walker's (1985) ten day study in the Grampians found that bees, including a wide variety of native bees, and one introduced species, were the largest group of pollinators (91%) for *A. retinodes* var. *retinodes*. Coleoptera & Diptera comprised the remaining 9% of insect foragers.

A. retinodes* var. *uncifolia - Bernhardt et al (1984) found bees, both native and introduced, to be the only consistent pollen vectors of *A. retinodes* var. *uncifolia*, despite the presence of other insect floral foragers. They noted that the absence of floral and extra-floral nectar excluded pollinators such as marsupials and birds and that long distance pollination in this species seems very unlikely.

SEED

SEED DESCRIPTION

Seeds longitudinal, oblong shaped, 4-6 mm long, dull to slightly shiny, dark brown to black. Funicle (the ovule stalk) three-quarters or more encircling seed, red-brown to blackish (Walsh & Entwistle 1999). Approximately 72 seeds/gram (Gowers 1990), and 66 germinants/gram at 25°C (Gunn 2001). Seed remains viable in the soil for many years (Earl et al 2001).

A. retinodes* var. *retinodes - 63-77 seeds/gram (GAV n.d.).
48-59 germinants/gram (Bonney 2003).

A. retinodes* var. *uncifolia no specific information found

SEED CROP

A. retinodes* var. *retinodes - Collect seed December to January (Bernhardt et al 1984; Ralph 1994), although time frame may vary with seasonal conditions (Bonney 2003). This species is a prolific seeder, and seed can be collected when the plant is in flower for its next crop (Bonney 2003). Seed is released immediately or within 1-2 days of ripening (Ralph 1994).

SEED DISPERSAL

Ants, Birds (Bonney 2003)

EXTRACTION & STORAGE

Seed needs to be separated from its pod. This can be achieved by placing on a tarp in direct sunlight to stimulate opening, or rubbing pods over a sieve (Ralph 1994). 82% viability after 5 years at 18-22°C (Gunn 2001).

PROPAGATION

Seed can be sown as late as October-November (Bonney 2001). Smoke treatment has improved germination with some *Acacia* species (Ralph 2003).

TREATMENT OPTIONS

Acacia retinodes* var. *retinodes - Propagate from heat treated (around 1 minute in hot water) or scarified seed, although some seed will germinate without treatment (Bernhardt et al 1984). Seed that floats is not viable (Ralph 2003).

GERMINATION TIME

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

FIELD ESTABLISHMENT

Tube stock.

Direct seed from early spring if soil moisture is present (Bonney 2003).

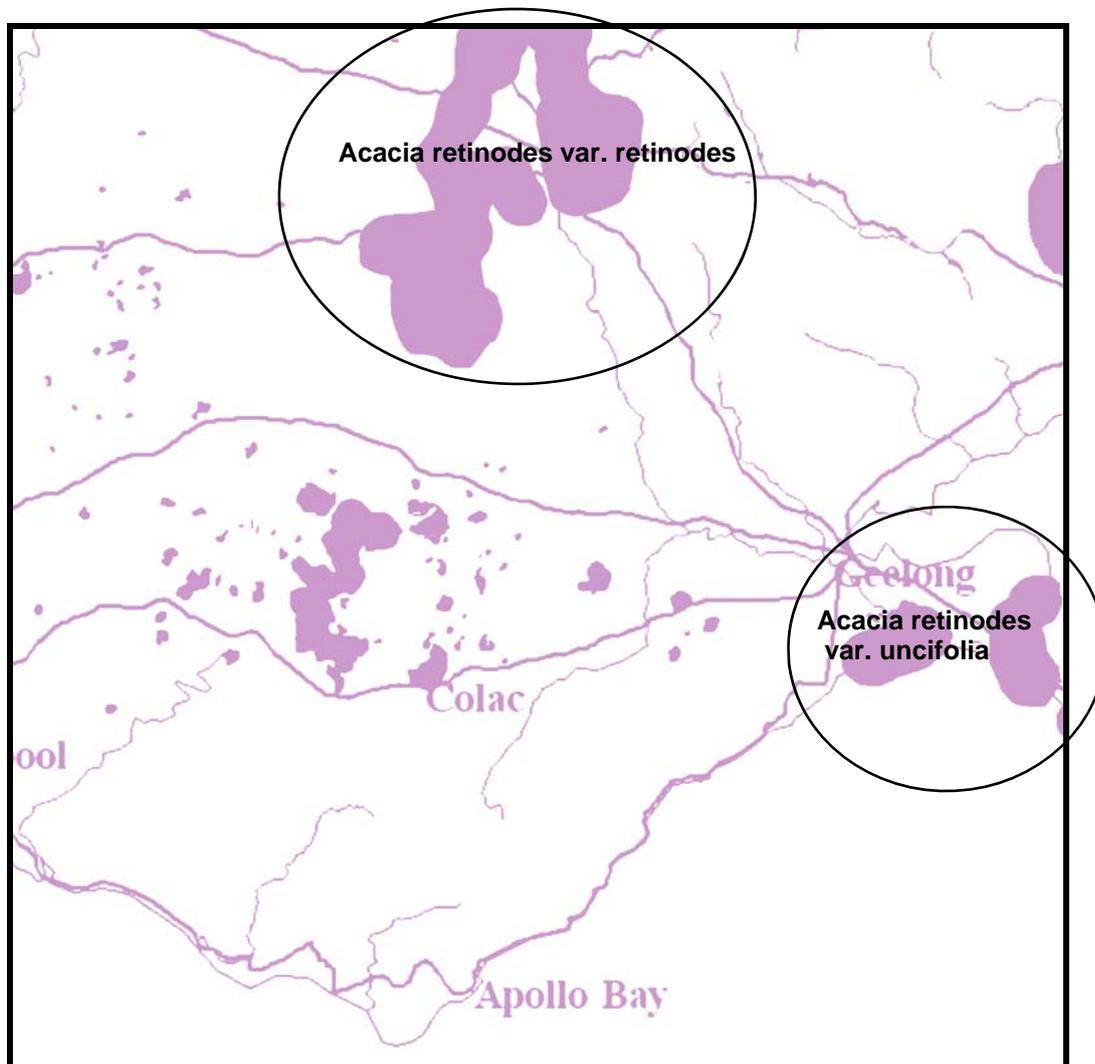
Regenerates from seed, particularly after fire (Bernhardt et al 1984).

Acacia retinodes* var. *uncifolia suckers readily, often forming dense groves (Walsh & Entwistle 1996).

**SEED COLLECTION RANGE - *Acacia retinodes* var. *retinodes* (inland)
Acacia retinodes var. *uncifolia* (coastal)**

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

In the Corangamite catchment, *Acacia retinodes* var. *retinodes* has a distinct distribution around the Ballarat area while *Acacia retinodes* var. *uncifolia* is found on the coast near Geelong. Both varieties have been extensively planted in revegetation projects beyond the natural ranges. The South Australian variety of *Acacia retinodes* var. *retinodes* should not be substituted for the endemic forms. 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 distribution of the species.



MAP: *Acacia retinodes* distribution

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

 *Acacia retinodes* populations

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