

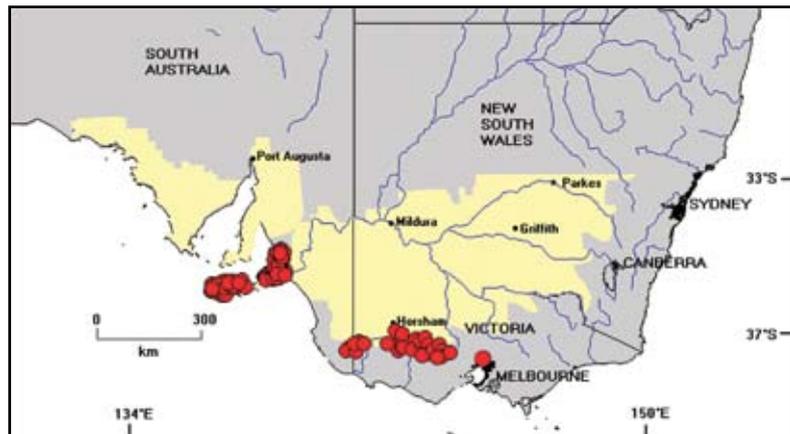
## *Acacia retinodes* Schldtl. ('swamp' variant)

### Common Name

Swamp Wattle.

### Special note

As discussed under *A. retinodes* 'typical' above there are four entities currently recognized within this species. It is likely that most of the previously published literature concerning *A. retinodes* refers to the entity discussed below as the 'swamp' variant. Therefore, the information presented in this profile is taken from these published accounts, supplemented by our own field observations and from unpublished information generously provided by Martin O'Leary (Adelaide Herbarium).



Map 55. Distribution of *A. retinodes* 'swamp variant'.

### Habit

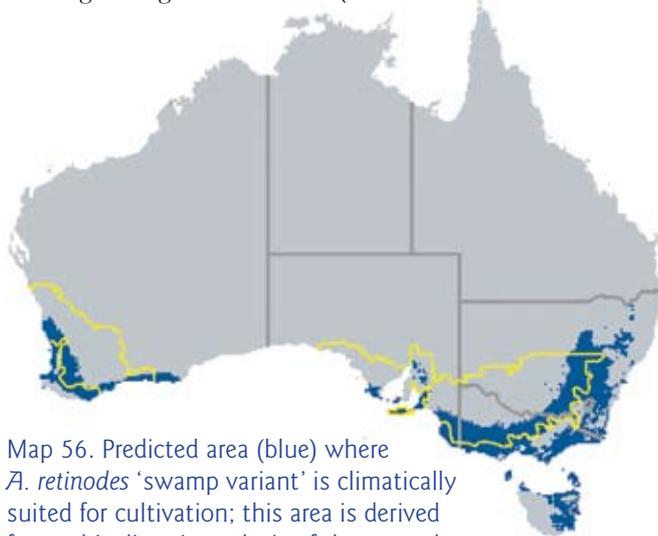
Trees commonly 5–6 m tall but can reach 8–10 m in wettest sites, single-stemmed or sometimes dividing at or near ground level into a few (2–4) main stems, main stems straight and 10–30 cm dbh, habit somewhat spindly on plants from within dense regrowth populations and on some plants from western Kangaroo Island; crowns spreading, openly branched or dense. Bark smooth, thin, persistent.

Botanical descriptions and line drawings are provided in Costermans (1981), Whibley & Symon [1992: the photographs in this account are of the 'typical' variant] and Maslin (2001a); it is photographed in Maslin *et al.* [1998: the flowers/pods on p. 43].

### Taxonomy

See note on the taxonomy of this variant under *A. retinodes* ('typical' variant) above.

Swamp Wattle is referable to *Acacia* section *Phyllodineae*, a diverse, and probably artificial, group of about 408 species (Maslin 2001) which are characterized by having '1-nerved' phyllodes and flowers arranged in globular heads (see Maslin & Stirton 1998 and Maslin 2001 for discussion). More



Map 56. Predicted area (blue) where *A. retinodes* 'swamp variant' is climatically suited for cultivation; this area is derived from a bioclimatic analysis of the natural distribution (red circles, Map 55), see also Table 5. Target area shown in yellow.

specifically this species is a member of the Australia-wide '*Acacia microbotrya* group' (Maslin 1995). A number of other species from this group are detailed in this report, namely, *A. bartleana*, *A. euthycarpa*, *A. microbotrya*, *A. rivalis* and *A. wattsiama*. Species of section *Phyllodineae* are widespread in Australia with the main centres of richness located in temperate and adjacent semiarid areas of eastern, southeastern and southwestern Australia; species number greatly decline in the arid zone and in northern tropical/subtropical areas (Hnatiuk & Maslin 1988 and Maslin & Pedley 1988).

Figure 27. *Acacia retinodes* 'swamp' variant



**A** – Mature plant on edge of dense regrowth (from seed) stand. (Photo: B.R. Maslin)



**B** – Stem dividing near ground. (Photo: B.R. Maslin)



**C** – Stem undivided. (Photo: B.R. Maslin)



**D** – Branch showing pale-coloured heads. (Photo: B.R. Maslin)



**E** – Section of stem showing lightweight wood. (Photo: B.R. Maslin)

It is possible that either the name *A. semperflorens* or *A. provincialis* (see **Genetics** below) may ultimately be shown as the correct name for Swamp Wattle, however, this matter is yet to be resolved.

## Distribution and habitat

Occurs in South Australia from near Mt Crawford through the Fleurieu Peninsula, Kangaroo Island and the far southeast, eastwards to the Grampians, Glenelg River and near Melbourne in Victoria (Maslin 2001a). The main area of occurrence of this species is to the south of the target area but it reaches the southern temperate periphery of the region. This species has been long cultivated abroad (see under **Cultivation** below). In its natural habitat *A. retinodes* 'swamp' variant grows in seasonally waterlogged or perpetually wet soil (acidic sand to clay) in swamps and along watercourses (M. O'Leary, pers. comm.).

## Flowering and fruiting

Flowering peak is in spring (September to November), with scattered flowering occurring throughout the year. The seeds of Swamp Wattle are smaller than those of *A. retinodes* ('typical' variant) and unlike that variant they tend to ripen over an extended period of time. There is a major seed drop between late December and February but seeding then continues, with smaller amounts of seed usually produced throughout the year.

## Biological features

In suitable environments Swamp Wattle displays a very fast growth rate (probably faster than *A. pycnantha*). For example, plants in cultivation in Adelaide Hills reached 3 m in 2 years and developed trunks 10–15 cm dbh. It is rather short-lived with a life span of around 10–20 years. The plants can be either frost tolerant (at Mylor in the Adelaide Hills) or frost sensitive (on Kangaroo Island), and according to Maslin *et al.* (1998) are slightly saline tolerant. Swamp Wattle does not sucker and its coppicing ability is presumably absent or low (although it is known that if potted plants are cut at about 10 cm above the soil they can develop a few main shoots with one usually dominating as a leader stem over time). Swamp Wattle is fire sensitive, but regenerates well from seed following fire. Unless otherwise stated the above information was supplied by Martin O'Leary (pers. comm.) and complemented by our field observations of the species.

## Genetics

*Acacia provincialis* was described from cultivated material in France and was said by its original authors to represent a hybrid between *A. retinodes* and *A. cyanophylla* (= *A. saligna*); having inspected these original specimens they appear to be simply *A. retinodes*. It is very unlikely that hybrids between *A. retinodes* and *A. saligna* would occur.

## Cultivation

This species has been long-used for ornamental purposes. According to Maslin *et al.* (1998) *A. retinodes* has been cultivated successfully in Mediterranean climates abroad (e.g. Rome, Italy) and in tropical highlands (e.g. Dalat, Vietnam); Whibley & Symon (1992) report it being occasionally established in California. It is not known with certainty what variant of the species was involved in these plantings but it is assumed to be Wirilda. According to Graham & Hart (1997) small plantings of *A. retinodes* have been established for agronomic assessment for use in the Australian native bushfood industry. The species is sometimes used for revegetation purposes in southern Australia, especially along roadverges. Despite its usage there appears to be no trial data available for this taxon.

From observations of wild populations it appears that plant spacing affects growth form and the amount of wood produced. Plants growing close together develop erect, relatively unbranched main

stems, but if too close they often develop a spindly growth form. More widely spaced plants produce larger volumes of woody biomass.

## Weed potential

No records of weediness for this species.

## Wood

Based on our limited field examination of this species it produces an exceptionally lightweight wood relative to its volume. Shrinkage upon drying caused large splits in the sample that we collected.

## Utilisation

### Wood

#### Land use and environmental

Sometimes used for roadside revegetation purposes. According to Elliot & Jones (1982) *A. retinodes* is a useful windbreak species (although it is not known to what variant of the species these authors were referring, it would apply to all of them).

#### Secondary plant products

The bark is considered a good source of tannin (Maiden 1889). Plants of this species yield good quantities of gum, but not as much as is found on plants of the 'typical' variant. The gum has good solubility but the resulting solution is of low viscosity and this property, together with its dark colour, makes it unlikely to be of any commercial importance (Anderson *et al.* 1972: these analyses were based on gum from plants cultivated at Montevideo, Uruguay).

#### Fodder

Foliage is grazed by cattle and sheep (Martin O'Leary, pers. comm.).

#### Human food

The seeds of *A. retinodes* are considered by Maslin *et al.* (1998) as having potential as a source of human food.

#### Other uses

Widely cultivated for horticultural purposes; although the flowers are unobtrusive they occur sporadically throughout much of the year, with the main flush in spring. The phyllodes of *A. retinodes* can be used to dye wool a yellow to fawn colour with an alum mordant (Martin 1974).

## Potential for crop development

Swamp Wattle is regarded as having reasonably good prospects as a crop plant for high volume wood production. It is ranked as a category 2 species and would be best suited to development as a phase crop (Table 6). In suitable environments Swamp Wattle displays a very fast growth rate, it does not root sucker and its coppicing ability is seemingly absent or only weakly expressed. These are all desirable attributes of a phase crop plant. The species produces reasonable quantities of woody biomass; the wood is pale coloured and is likely to have a low density value (thus attractive for use in reconstituted wood products). The growth form of Swamp Wattle is good and reasonably close-spacing of plants in cultivation could be tolerated but if grown too close the plants are likely to be spindly and wood volumes reduced. Harvesting of plants prior to them reaching biological maturity will prevent the creation of a soil seed bank that may lead to the species becoming a weed in adjacent or subsequent annual crops (although the seedling regeneration may possibly be treated as a form of green manure). For this to be a viable strategy it would require that the plants had produced acceptable

quantities of wood prior to attaining reproductive maturity. It is not known at what age flowering and fruiting commences.

The area predicted to be climatically suitable for the cultivation of *A. retinodes* 'swamp variant', based on its natural climatic parameters, is shown in Map 56. This analysis indicates that Swamp Wattle is suited to climatic conditions well beyond its natural distribution. A large proportion of the eastern and western target areas are predicted to have climatic conditions suited to its cultivation despite its relatively restricted natural distribution. Although the analysis indicates that *A. retinodes* 'swamp variant' could be cultivated over a wide area within the 450–650 mm rainfall zone of the target area it may be suitable for only specific sites within this zone. In its native habitat this species grows in wet areas and its apparent high water requirement may well constrain where it can be cultivated. Plants established for revegetation purposes died out on dry sites at Anstey Hill in the Adelaide foothills (annual rainfall approximately 500 mm). Even if suitable soils are located for its establishment it is not known how it will perform as soil profiles dry out under cultivation.