

Acacia rostellifera Benth.

Common Name

None known.

Habit

Dense shrubs or trees commonly 2–5 m tall. A 'typical' plant has main stems 5–10 cm dbh; the largest plant observed during this survey measured 6–7 m tall and 10 m across, it branched near ground level into about 4 trunks, each 15–20 cm dbh (main trunk about 60 cm diam at ground level); normally aggressively suckering and commonly forming thickets. When growing within dense clonal thickets the plants are often rather spindly with stems about 2–3 cm dbh. Bark longitudinally fissured on main stems (especially at base), smooth on branches, grey.

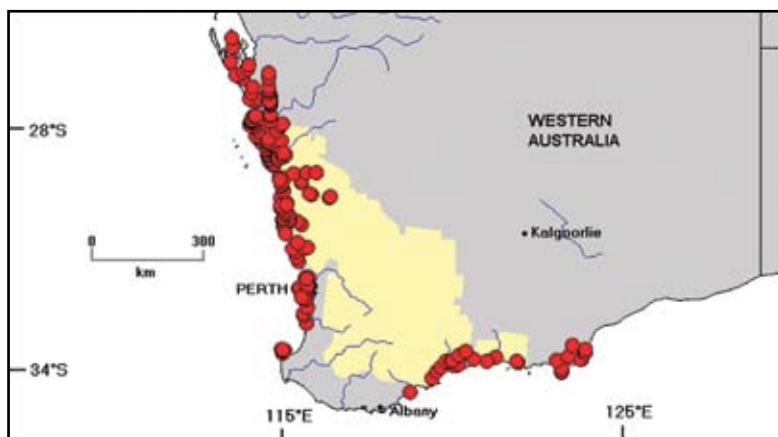
Botanical descriptions and illustrations/photographs are provided by Chapman & Maslin (1992) and Maslin (2001 & 2001a).

Taxonomy

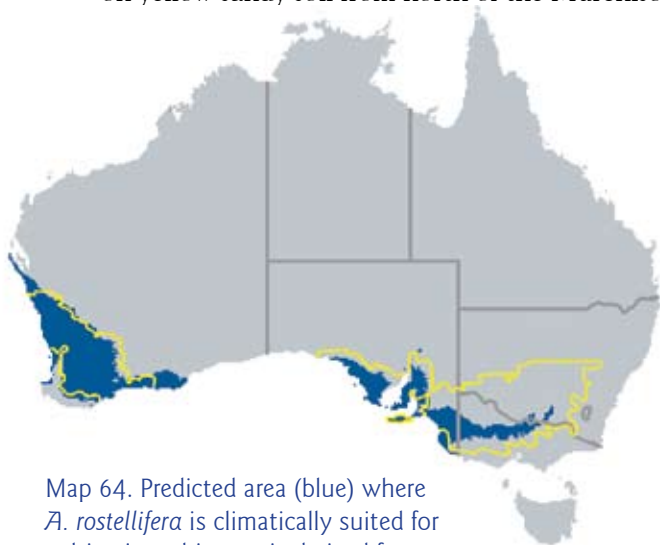
Acacia rostellifera is referable to *Acacia* section *Phyllodineae*, a diverse, and probably artificial, group of about 408 species (Maslin 2001) which are characterized by having '1-nerved' phyllodes and flowers arranged in globular heads (see Maslin & Stirton 1998 and Maslin 2001 for discussion).

Acacia rostellifera is one of 12 species of a group of closely related taxa referred to by Chapman & Maslin (1992) as the '*Acacia bivenosa* group'. *Acacia rostellifera* and *A. salicina* are the only members of this group detailed in the report. *Acacia rostellifera* is particularly closely related to the widespread arid zone species, *A. ligulata*.

A somewhat variable species with respect to phyllode shape and size. A narrow phyllode form occurs on yellow sandy soil from north of the Murchison River near Ajana to Shark Bay (Chapman & Maslin 1992).



Map 63. Distribution of *A. rostellifera*.



Map 64. Predicted area (blue) where *A. rostellifera* is climatically suited for cultivation; this area is derived from a bioclimatic analysis of the natural distribution (red circles, Map 63), see also Table 5. Target area shown in yellow.

Distribution and habitat

Endemic in Western Australia where it occurs in coastal areas from Shark Bay south to Cape Naturaliste and then from Bremer Bay east to Israelite Bay; around Geraldton it extends inland through Northhampton to near Yuna and south to Latham. Normally the species is very common in the places where it occurs and it usually forms dense, monotypic, clonal thickets. Grows most commonly in porous coastal sand; along roadverges inland from Geraldton it may occur on granitic rocky sand.

Figure 31. *Acacia rostellifera*



A – Large, mature plant with spreading habit, in open road verge site near Geraldton, W.A. (Photo: B.R. Maslin)



B – Forming dense thickets in coastal dunes. (Photo: B.R. Maslin)



C – Branch showing heads in short racemes. (Photo: B.R. Maslin)



D – Adolescent plant in dense coastal sucker regrowth population. (Photo: B.R. Maslin)



E – Pods brittle: seeds with red aril. (Photo: B.R. Maslin)



F – 22 month old plant in trial at Dongara, W.A. (Photo: J. Carslake)

Flowering and fruiting

Flowers mainly between July to October and pods with mature seeds have been collected from December to March.

Biological features

A hardy plant probably with moderately fast growth rate; it probably has a life span of about 20 years. *Acacia rostellifera* normally has an aggressively suckering habit and commonly forms thickets; its coppicing/pollarding ability is unknown (but may well be present since its close relative *A. ligulata* has a high coppicing ability, see Thomson *et al.* 1994). Presumably because it commonly reproduces vegetatively it tends to fruit somewhat irregularly. When present the pods often occur scattered over the plants and the seed can be somewhat tedious to collect. An analysis of the gum characteristic of *A. rostellifera* is provided by Anderson *et al.* (1984).

Genetics

Natural hybrids appear to occur between *A. rostellifera* and *A. xanthina* (which is not considered a priority taxon in the report) around Leeman which is south of Geraldton, Western Australia.

Cultivation

Not known in cultivation but was recently included in some provenance trials in the wheatbelt region of Western Australia (but plants are too young to give meaningful information).

Weed potential

The species' root-suckering habit and tendency to form dense thickets may possibly lead to some weediness when conditions are favourable.

Wood

Pale coloured throughout (scarcely any dark heartwood developed). Basic density values range from 727 kg/m³ to 948 kg/m³ (mean 835 kg/m³) based on analyses of 13 wood samples by CALM's NHT-supported 'Search' project (unpublished data). Note: This study preferentially sampled young and adolescent plants.

Utilisation.

Land use and environmental

Well-suited to sand dune stabilisation.

Potential for crop development

Acacia rostellifera is regarded as having only moderate prospects as a crop plant for high volume wood production. It is ranked as a category 3 species and would seem best suited to light-textured soils as a phase crop (Table 6), however, its vigorous suckering propensity may present difficulties for its management. Under natural conditions *A. rostellifera* displays a moderately fast growth rate and is capable of producing quite good quantities of woody biomass, however, the wood is rather dense which lowers its attraction for use in reconstituted wood products. Plants from open sites tend to be quite wide-spreading and low-branched but growth form improves in denser stands. If grown too close together, however, the plants may become somewhat spindly. Collecting seed could prove difficult.

As discussed by Chapman & Maslin (1992) *A. rostellifera* belongs to a group of 12 closely related species, the '*Acacia bivenosa* group'. *Acacia salicina* is a member of this group and is detailed below and treated as a Priority 2 taxon. A number of other members of the group occur within the target area

and of these *A. ligulata* (widespread in the arid zone) may possibly have some limited application. It is, however, generally a wide-spreading much-branched shrub with marginal woody biomass production. Also, field observation of one plant in South Australia showed the wood to be very dense with an extensive development of very dark heartwood.

The area predicted to be climatically suitable for the cultivation of *A. rostellifera*, based on its natural climatic parameters, is shown in Map 64. This analysis indicates that *A. rostellifera* is well suited to climatic conditions beyond its natural range. It has the potential to be grown throughout both the western and eastern target areas including large parts of South Australia and into target areas in Victoria and southern New South Wales. These predicted areas could be more extensive if this species demonstrates an ability to also grow in uniform and summer rainfall zones. Within the area predicted to have suitable climatic conditions, *A. rostellifera* will be best suited to grow on deep sandy soils. Trials are warranted to ascertain if variation among provenances exists for edaphic specificity.