

Grevillea robusta

Silky Oak

Family: Proteaceae World: c. 150 genera, 1800 spp., widespread in tropical and temperate regions, especially Sth Africa and Australia. Australia: c. 40 genera., 320 spp., all States.

Genus: *Grevillea*: World: 260 spp., Aust., NG., Indonesia, New Caledonia. Australia: 255 spp. All states

Common name: Silky Oak, Southern Silky Oak

Standard trade name: Southern Silky Oak

Derivation: Botanical: Grevillea after C. F. Greville, a noted British algologist, one of the founders of the Royal Horticultural Society; robusta from Latin `robusta' robust, referring to the large size attained by this species of a predominantly shrubby species. Common: alludes to the fact that the wood resembles oak (*Quercus* spp.) in appearance, and silky because of the wood texture when freshly split.

Habit: A beautiful fast growing medium sized tree. When open-grown the crown is pyramidal to conical in shape and has an open canopy. The fern-like foliage is very distinctive in the forest. The species is semi-deciduous being almost leafless shortly before flowering in the period October to November.

Mature Tree Height: Attaining a height of 37m.

Trunk: Cylindrical, not buttressed or prominently flanged.

Stem Diameter: 90cm, occasionally reaching 1 m diameter.

Outer bark: Grey to dark greyish brown, usually vertically fissured and ridged or furrowed into a lace-like pattern. Often with firm scales on the crest of the ridges. Also has conspicuous vertical lenticels about 0.5 to 10 mm in length. Outer dead bark is seen to be cork-like.

Underbark: Mid brown

Live bark: Outer surface dark red

Inner bark: Blaze on a tree 60cm diameter, pinkish red becoming paler at the inner margin, somewhat firm and fibrous in texture and showing the characteristic ray markings of the family. Does not change colour very rapidly, except the inner margin, which changes to yellow after a few minutes exposure. 20mm thick, half of which is dead bark

Resin: Astringent to taste, no distinct smell

Timber: Yellow brown, with a silky lustre. Medium hard, tough. With prominent medullary rays producing the typical oak grain. Medium texture, straight grained. Sapwood pale. 600kg/m³

Timber Uses: The ornamental wood was once much used for cabinet work, furniture and coach building, but is now rarely seen and has been replaced on the market by the other more common Silky Oak (*Orites excelsa*). Also used for turnery, indoor fittings and plywood. Seasons well, works easily. The heartwood is sufficiently durable for external use in sheltered locations not in ground contact. Sapwood subject to *Lyctus* attack.

Branchlets: Young branchlets green for up to 25cm from the ends, often angular and ridged, rusty hairs, velvety in appearance, marked by rows of brownish lenticels

Young Shoots & Buds: Young shoots densely hairy, silky down.

Leaves: Compound. Alternate, pinnate, divided into segments (eleven to twenty-four), which are again divided into lobes that are entire or sometimes again divided, giving the foliage a fern-like and silvery look. 15 to 30cm long, 8 to 12 cm wide. Leaflets tapering at the base and to a fine point at the tip. Upper surface dark green, glabrous or sprinkled with appressed hairs, underside covered with a silky down

Venation: Midrib distinct, lateral and net veins obscure, leaf rachis often hairy

Flowers: Bisexual. Orange yellow in branched toothbrush-like erect inflorescences consisting of several racemes 7 to 13cm long, produced on older wood Flowers in pairs. Individual flowers 12 to 20 mm long on slender pedicels about 12mm long. Perianth, 4 narrow tepals, smooth, 6 to 10 mm long. Ovary surmounts a gynophore 2 to 3 mm long. Style yellow orange, usually protrudes from a slit on the lower side of the perianth tube before the summit (containing the stigma) is set free, & once free the style finally straightens. Flowering period September to November.

Fruit: A follicle, brown or black, dry and woody, smooth, oblique or boat-shaped, up to 20mm long, 12 mm wide, with a long slender beak up to 25mm long (style persistent). Dehiscent. Fruit ripe December to March.

Seeds: Brown, winged, flat, ovate-oblong, about 10 to 13 mm long, 5 to 8 mm wide. With a shiny centre surrounded by a papery wing.

Seedlings: The cotyledons of seedlings are thick, three veined and sessile. Margins hairy. The first leaf is three to five-lobed, second leaf is seven-lobed and the third to ninth leaves are eleven to thirteen-lobed. Seedling rachis winged, alternate, whole seedling covered in silky hairs, green discolourous, only midrib visible and raised on undersurface.



Habitat: Commonly in riverine rainforest but also in subtropical and dry rainforest on basaltic soils. Also wet sclerophyll forest. Occurs in the dry upper reaches of coastal rivers in northern NSW & southern Qld. Can also occur on dry exposed hillsides.

Associated Habitat Species: At Bunya Mountain, Qld & elsewhere the species can be found growing in rainforests as well as associated with River She-Oak (*Casuarina cunninghamiana*) in the drier creeks which flow from the mountain into woodland. Common associates on more mesic sites include Bunya Pine (*Araucaria bidwillii*), Hoop Pine (*Araucaria cunninghamii*), Black Bean (*Castanospermum australe*) and Lacebark (*Brachychiton discolor*).

Altitudinal Range: From 100 to 800 m.

Distribution: From the Guy Fawkes River, NSW to about Maryborough, Qld. The range of latitude is about 27 to 30 S.

Sites Recorded (NSW): Guy Fawkes River NP, Bagawa SF, Kangaroo River SF, Hortons Creek, Boundary Creek SF, Lower Orara River, Susan Island NR, Grafton, Mt Pikapene SF, Myrtle Creek, Rivertree, Toonumbar SF, Unumgar SF, Yabbra SF, Beaury SF, Koreelah, Moore Park, Border ranges NP, Lismore, Boatharbour, Murwillumbah

Soils & Geology: Species prefers rather fertile soils such as those derived from river alluvia or basalts but will grow on shallower less fertile podsolic soils derived from sedimentary material.

Climatic Conditions of Natural Range: Warm humid to warm sub-humid climatic zones. The mean maximum temperature of the hottest month is about 28 to 30 C and the mean minimum of the coldest month is 5 to 6 C. Occasional frosts each year would be experienced in most localities. The mean annual rainfall is 1000 to 1500 mm with a summer maximum and a pronounced dry spring.

Regeneration: 43 000 to 83 400 seeds per kilogram. Germination of sown fresh seed was 75% after 28 days. When stored dry at room temperature it was 30% after 1 year but declined to 6% after 4 years. When stored at +2 deg. C., germination was satisfactory for at least 2 to 3 years. The species seeds well and regenerates strongly after any site disturbance in rainforests.

Growing Characteristics: The species is able to tolerate a lot more frost and much drier conditions than is indicated by the conditions under which it grows naturally. Will tolerate full sun from an early age, can be fast growing when well watered and fertilized. Widely grown in southern and central Australia, e.g. Canberra, Cowra and Alice Springs. Also grown in the tropics in such countries as India and Sri Lanka.

