Corangamite Region Guidelines

Solanum laciniatum
Kangaroo Apple

TAXONOMY

Division	Angiosperm
Subclass	Dicotyledonae
Family	SOLANACEAE

Previous Taxonomic Names

Has been known as *S. laciniatum* since 1789. A revision of the *Solanum* family in Australia was undertaken by Symon in 1981. The changes proposed for *S. laciniatum* in this paper have not been adopted. The name has also been misapplied to *S. aviculare* G.Forst. (ANH et al 2005). The following names are all synonymous with *S. laciniatum*, and none are currently recognised by the Australian National Herbarium in the Australian Plant Name Index (ANH et al 2006):

- *Solanum aviculare* var. *laciniatum* (Aiton) Domin
- *Solanum laciniatum* f. *australiense* Geras.
- *Solanum laciniatum* f. *cultum* Geras.
- *Solanum laciniatum* Aiton f. *laciniatum*
- *Solanum laciniatum* f. *novazealandicum* Geras.
- *Solanum laciniatum* f. *tasmanicum* Geras.
- *Solanum laciniatum* f. *viridicaule* Geras.
- *Solanum laciniatum* var. *fruticosum* Salisb.
- *Solanum laciniatum* var. *herbaceum* Sweet
- *Solanum pinnatifolium* Lam.
- *Solanum pinnatifolium* Salisb.
- *Solanum reclinatum* L'Her. ex Pers.

Taxonomic Status

Long lived woody perennial

Common Names

Kangaroo Apple (Bonney 2003), Large Kangaroo Apple (Walsh & Entwisle 1999), Cut-leaf Kangaroo Apple (GAV n.d.)

MORPHOLOGY

Erect shrub to 3m high, green, often with purplish stems, branches and stems smooth except for minute hairs on young growth, prickles are absent. Leaves lobed or smooth edged, tapering to a point and both sides of the leaf are the same colour. Lobed leaves broad-ovate, 9-38cm long, petal lobes 2-13cm long and 0.3-2cm wide.
Leaf stalk 1-4cm long, entire leaves lanceolate, 5-20cm long, 1-4cm wide. Flowers on stalks, deep purplish-blue, petal lobes notched at the tip. Berry ovoid and egg shaped, 15-20mm diameter, yellow to orange-yellow (Walsh & Entwisle 1999).

SUBSPECIES

None

HYBRIDS

None known

SIMILAR SPECIES

Solanum aviculare, also known as Kangaroo Apple has acute-pointed petals and can often be found along watercourses (Costermans 2003)

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GEOGRAPHIC RANGE
A widespread species found throughout the southern and central areas of Victoria, often on rocky sites and disturbed areas. Also SA, NSW, TAS, WA (introduced) and New Zealand (Walsh & Entwisle 1999).

BIOREGIONS
Victorian Volcanic Plains Otway Plain Otway Ranges Warrnambool Plain
Central Victroian Uplands

PLANT COMMUNITIES
In Corangamite, *Solanum laciniatum* is found in dry foresst, woodlands, lowland and riparian forests, and coastal scrub and heathlands. In the Victorian Volcanic Plains it can be found in Riverine Grassy Woodland, while in the Otway Ranges it can be found in Wet and Damp Forest.

FRAGMENTATION
Unknown

POPULATION DENSITY
Unknown

RELEVANT HISTORY & RESEARCH
Commercially cultivated as a source of solasodine for cortisone and other steroid drugs (Walsh & Entwistle 1999).

BREEDING SYSTEMS
FLOWERING
Flowers are a deep purplish blue with notched lobes (Walsh & Entwisle 1999). Flowers mostly in spring and summer, from September until March (Walsh & Entwisle 1999; Bonney 2003).

POLLEN
Pollen is considered dry and powdery (King & Buchmann 1996). Pollen yields unknown.

POLLINATION
King & Buchmann (1996) suggest that *S. laciniatum* requires sonication or vibration from native or introduced bees to pollinate the flowers. This process is called 'buzz pollination' and requires vibration from the bees flight muscles when curled around the anthers (Buchmann 1978). King & Buchmann (1996) also suggest that flowers of the *Solanum* family (such as tomatoes, kangaroo apple) exhibit features that are associated with buzz pollination including pendant, symmetrical flowers, which are isolated from the leaves; a prominent cone of stamens and a simple style that protrudes from the anther cone; and the absence of nectar production.

POLLINATORS
Native and introduced bees (Bonney 2003) and possibly other insect pollinators.

SEED
SEED DESCRIPTION
There are approximately 30 seeds held within each fruit (Gowers 1990). Seeds are 2-2.5mm long and reddish-brown in colour (Walsh & Entwisle 1999).
At least 207 seeds/gram (GAV n.d.).
87-207 germinants/gram (GAV n.d.).

SEED CROP
Fruit turns orange when ripe (Bonney 2003). Collect from December-February (Ralph 1994).

SEED DISPERSAL
Birds such as honeyeaters and Silvereyes are the major dispersers of seed. Larger birds such as parrots and emus destroy the majority of seed they digest through the grinding process that occurs within their stomachs (Bonney 2003).

EXTRACTION & STORAGE
Seed can be collected by waiting for old fruit to wither dry on bushes, or collecting ripe fruit. Ripe fruit should be punctured and placed in a warm dry area to fully dry, which usually takes 2-3 weeks. The fruit will give off an unpleasant odour. Seed can then be rubbed away from the skin and sieved to clean (Ralph 1994; Bonney 2003). Seed should be dried before storage (GAV n.d.).

Seed stored at 3-5℃ will retain viability for a few years (Ralph 2003), though germination tests performed on seed stored for 2-4 years at the Leongatha Seed Back showed no germination (Bowler per's comm. 2007).

TREATMENT OPTIONS
Stratification and washing of seed before sowing has proved beneficial (Bonney 2003).
Treatment with smoke water may improve germination results (Ralph 2003).

PROPAGATION
Sow seed fresh, or use seed that has been stored between 3-5℃ (Ralph 2003). Sow from late winter to early spring and place in open, sunny position (Bonney 2003).

GERMINATION TIME
Germination usually occurs within 3-6 weeks (Ralph 2003).

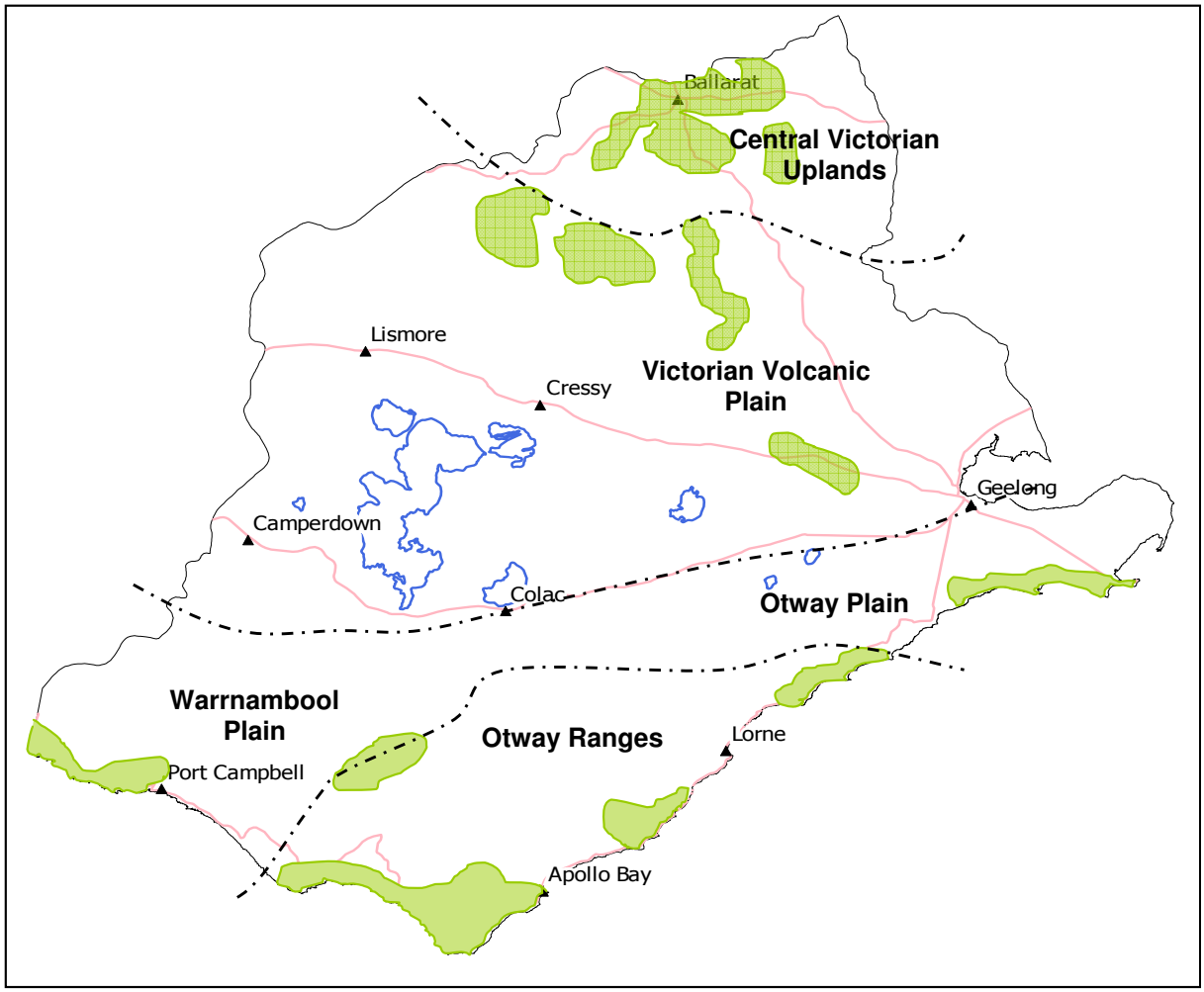
FIELD ESTABLISHMENT
Tube stock
Well suited to direct seeding, provided that sufficient quantities are available (Bonney 2003; Ralph 2003). Direct seed in late winter into light, weed free soils (Bonney 2003).
S. laciniatum is an opportunistic plant which regenerates well after fire or ground disturbance (Bonney 2003).

SEED COLLECTION RANGE - *Solanum laciniatum*

Intermediate - within which, collection can be extended to formally contiguous remnants

Considering *S. laciniatum's* mechanism for dispersal is through birds (Bonney 2003) and where populations are still very large and connected such as in the Otway Ranges, ensuring collection from at least 30-50 parent plants within a broad area should provide sufficient genetic diversity. Ideally coastal populations should be kept separate from inland populations, while taking into account natural boundaries such as rainfall and soil type. Ethical collection parameters as per FloraBank Guidelines should always be followed. Refer to www.florabank.org,au.

It is generally best to collect seed fresh for sowing for projects in the same year.



MAP: *Solanum laciniatum* distribution
DATA SOURCE: DSE Flora Information System 2004, accessed April 2005

Solanum laciniatum populations

Approximate Bioregion Boundaries

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