



## Thunbergia species

### DECLARED CLASS 1 AND 2



*Thunbergia grandiflora* flower



*Thunbergia grandiflora* seed capsule



*Thunbergia grandiflora* infestation

## Species

The four species of *Thunbergia* declared under the *Land Protection (Pest and Stock Route Management) Act 2002* in Queensland are:

*Thunbergia laurifolia* – Laurel Clockvine

*Thunbergia annua*, *Thunbergia fragrans* (Class 1).

*Thunbergia grandiflora* – Blue Trumpet vine or Blue Sky vine (Class 2).

*Thunbergia grandiflora* is the most widespread pest species, having been used as a garden ornamental for its attractive large leaves and hanging groups of large, pale lavender flowers.

While other species of *Thunbergia* (*Black-eyed Susan*, *Scarlet Clock vine*, *Golden glory vine*, *Lady's slipper*) are not declared they are not recommended for planting because of their potential to spread into surrounding bush.

*Thunbergia arnhemica* is the only native species and occurs in Northern parts of Queensland, Northern Territory and Western Australia (can be confused with *fragrans*).

## Description

All *Thunbergia* species are vigorous perennial twining vines.

### *Thunbergia grandiflora*

The leaves are opposite along the stem and are choko-like; up to 15 cm long and 10 cm broad, broad-based narrowing to a pointed tip, usually with deeply scalloped lobes towards the base.

The trumpet-shaped flowers have a short, broad tube, white on the outside, yellowish inside, which expands to five rounded pale lavender-blue petals, one larger than the others. The flowers are up to 8 cm long and 6–8 cm across.

The seed pod is inconspicuous, cone shaped, 3–5 cm long, with a rounded base. The seed is flat, up to 1 cm long and covered with brown scales. It is catapulted several metres when the ripe pod splits.

The plant develops a very tuberous root system, some tubers being as large as 70 kg. The root system when cut, persistently sprouts from its many dormant buds.

### Other species of *Thunbergia*

*T. laurifolia* is very similar in appearance and habit to *T. grandiflora*. It has similar flowers, leaves are similar size but a different shape and texture, being oval and narrowing to a pointed tip. Infestations of *T. laurifolia* are not as large as *T. grandiflora* but more and more infestations are being found over a wide area.

*T. fragrans* (a small low vine with slender climbing stems and white flowers) is being reported more frequently in Queensland.

*T. annua* has not been found in Australia to date. *T. arnhemica*, the native species has only slender stems 1–3 m long, arising from woody rootstock. The opposite, arrowhead-shaped leaves, up to 7 cm long

and 3 cm wide, are spaced at intervals of up to 20 cm along the stem. Pure white, bell-shaped flowers about 5 cm across are produced during the northern wet season. It is an attractive climber for use in rockeries or shrubbery in open positions.

## The problem

*Thunbergia* species are a major threat to remnant vegetation in the Wet Tropics.

In the past *Thunbergia grandiflora* and *T. laurifolia* were promoted and sold in Queensland as attractive garden plants, and both became widespread in Queensland gardens. These vigorous plants soon escaped into native bushland and began causing considerable environmental damage.

The plant climbs and blankets native vegetation often pulling down mature trees with the weight of the vine. Smothered vegetation also has dramatically reduced light levels to lower layers of vegetation drastically limiting natural growth, and killing many native plants. Large tubers degrade creek and river banks and make destruction of the pest difficult.

In garden situations it will also quickly spread, and the large tubers may cause damage to paths, fences and foundations.

## Life cycle and dispersal

*Thunbergia* species are native to northern India, and tropical Africa, and grow best in frost-free locations. They are perennial, living for many years.

Initially it was believed *Thunbergia* did not set viable seed, but this has now been disproved.

Most propagation however is from stem cuttings or shoots from the tuberous roots, particularly when damaged or severed.

Dispersal of *Thunbergia* can often be traced to transport of root pieces along river banks during floods, or transport from infested sites with earth removed for fill or other soil use.

## Distribution

Infestations of *Thunbergia grandiflora* are patchy and are mostly scattered along coastal streams from the Tully River to the Daintree. Areas of acute infestation are the Mulgrave River, the Johnstone River and lower Mossman River.

*Thunbergia laurifolia* infestations are more isolated throughout the same area. Early control of these isolated plants is essential to prevent establishment of further infestations.

*Thunbergia fragrans* is recorded as a "principal" weed in Hawaii, is naturalised in the USA and is being found to have a fairly wide distribution in Queensland.

*Thunbergia annua* is a weed in Sudan and has not yet been recorded in Australia. Every effort should be made to prevent this weed from entering Queensland, as prevention is cheaper than cure.

## Declaration details

*Thunbergia laurifolia*, *Thunbergia fragrans* and *Thunbergia annua* are declared Class 1 plants and *Thunbergia grandiflora* is declared Class 2 under the *Land Protection (Pest and Stock Route Management) Act 2002*. Declaration requires landholders to control declared pests on the land and waters under their control. A Local Government may serve a notice upon a landholder requiring control of declared pests.

Note that while *T. fragrans* is currently declared, it is under review and may be reclassified.

## Prevention

*Thunbergia* was originally sought for its attractive lavender flower, and spread primarily via the ornamental plant trade.

**Illegal sale of declared *Thunbergia* species should be reported to the Department of Primary Industries and Fisheries.**

Public awareness of this garden escapee with its vigorous growth and alarming potential to spread is increasing.

Existing garden specimens should be destroyed and replaced with other species. Plant cuttings should not be dumped anywhere as this is a frequent source of new weed infestations.

The origin of new top soil or fill should be checked as physical transportation of plant segments in soil or flood waters is a major method of spread.

## Mechanical control

The cutting of the vines at ground level will give a smothered tree a reprieve, but regeneration from tubers will soon occur.

Only small plants can be dug out, as established plants normally have extensive underground tubers.

Spraying or injecting with herbicides is often the only option.

## Herbicide control

Chemical treatment is often the only option available and provides fast and effective control.

Arsenal is the only herbicide registered for the control of *Thunbergia* – see table below. It is systemic so when applied as a foliar spray it is transported within the plant to kill the underground tubers.

Arsenal is very effective in killing *Thunbergia* but it does not drastically affect surrounding vegetation. Good application technique should result in few non-target plants being killed.

Although very effective one application by either overall spraying or injection, rarely achieves 100% kills. **Ongoing monitoring and follow-up is needed.**

Although Arsenal has been reported as having been withdrawn from production it is still available from some resellers.

## Further information

Further information is available from the vegetation management/weed control/environmental staff at your local government.

TABLE 1 – HERBICIDES REGISTERED FOR THE CONTROL OF *THUNBERGIA*

Situation	Herbicide	Rate	Comments
Non-crop	Arsenal 250 A	750 mL/100 L	Overall spray to point of runoff



*Thunbergia fragans* flower



*Thunbergia fragans* leaves



*Thunbergia laurifolia* flowers and leaves



*Thunbergia laurifolia* infestation