

# Siam weed

*Chromolaena odorata*



Siam weed (*Chromolaena odorata*) is considered one of the world's most invasive weeds and has the potential to spread across northern Australia and down both the eastern and western coastlines.

Siam weed was first identified in Australia in 1994 as several large infestations along the Tully River and at Bingil Bay near Mission Beach in far north Queensland. More recent surveys have identified Siam infestations in the Townsville–Thuringowa, Mossman and Mount Garnet areas.

Siam weed has the potential to seriously degrade large areas of wet/dry tropic savanna grasslands, subtropical and coastal regions, and ecologically important conservation areas.

Agricultural and horticultural production (particularly crops such as bananas, paw paw and sugarcane) and forestry plantations are also at risk.



## Declaration details

Siam weed is a Class 1 declared plant under the *Land Protection (Pest and Stock Route Management) Act 2002*. A Class 1 pest has the potential to become a very serious pest in Queensland in the future. We need to prevent the import, possession and sale of these species.

All landholders are required by law to keep their land free of Class 1 pests. It is a serious offence to introduce, keep or sell Class 1 pests without a permit. The state government may serve a notice upon a landholder requiring eradication of Class 1 pests.

## Description and general information

Siam weed looks similar to blue top or Billy goat weed (*Ageratum* spp.) but has a growth habit similar to lantana (*Lantana camara*).

In the open, Siam weed grows as a dense tangling bush to 2–3 m; however, it can scramble up trees to a height of 20 m.

Several stems develop from the crown and the root system is fibrous and shallow in most soils. The plant also develops an enlargement at the junction of the stem and root, which is referred to as the basal ball.

Siam weed dies back in the dry season but re-shoots after rain. Regrowth also occurs rapidly after fire, slashing or chemical pruning.

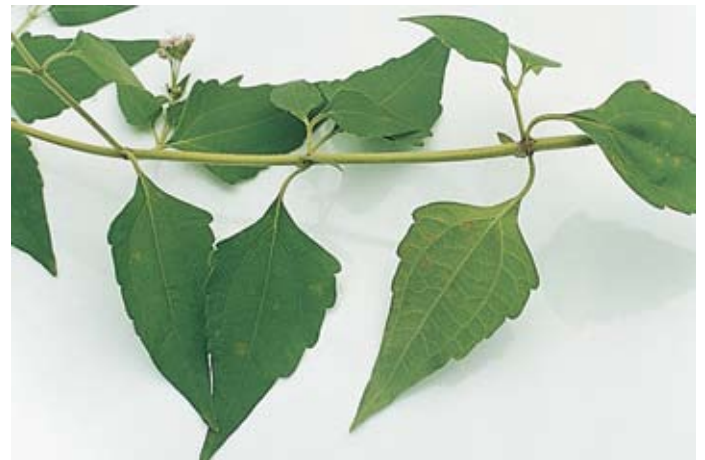


## Leaves

The leaves of Siam weed are soft, green, hairy and roughly triangular in shape with a distinctive three-vein ‘pitchfork’ pattern. They can emit a distinctive odour when crushed. New leaf growth can have a purple colouration.

Siam weed looks similar to blue top or Billy goat weed, but its leaves are generally softer, more triangular in shape, less hairy and less serrated (toothed) on the edges.

The stems are smooth, round and fairly brittle, becoming woody at the base when old. The plant has no prickles.



## Flowers

There are two forms (phenotypes) of Siam weed in Queensland. The most common form flowers from May to July and again in September to October, producing masses of pale lilac flowers that appear white from a distance.

These turn a darker pink when mature. The less common form flowers earlier during February and March and appears to be isolated to one sub-catchment (Davidson Creek) in the Tully River system.

Flowering appears synchronised across the Southern Hemisphere, and is triggered by the length of day.

## Life cycle

Within 8–10 weeks of flowering, masses of small brown seeds are produced. Each seed has a tuft of white hairs that allow it to be transported by wind and water. Seeds also have tiny barbs that stick to clothing, footwear, animals, vehicles and machinery.

Most seeds germinate immediately after rain, though some appear to remain dormant for several years. Seed longevity research is continuing.

Siam weed is a perennial that can outcompete and smother crops and native vegetation because of its phenomenal growth rate (20 mm per day or 5 m per year) and ability to scramble up into taller plants to a height of 20 m. It also produces huge numbers of wind-borne seeds (more than 80 000 seeds per plant per season).

Siam weed will grow in similar areas to lantana, so it readily invades remnant patches of rainforest, and creek and riverbank vegetation. It can also grow under dense rainforest canopies, but less vigorously. Cape York and the Wet Tropics World Heritage Area are particularly at risk.

### Toxicity

Young regrowth of Siam weed contains very high nitrate levels. In other tropical countries it has caused cattle deaths and abortions where stock have been hand fed with contaminated fodder.

Stock usually avoid eating the leaves (because of their bitter taste) but will nip off flower and seed heads.

### Fire hazard

In the dry season dense thickets of Siam weed can cause frequent and intense bushfires. Dry Siam weed stalks burn hotter and flames reach higher into trees compared to vegetation of a pure grassfire.

### Health issues

Siam weed may also cause skin complaints and asthma in allergy-prone people.

### Habitat and distribution

A native of Central and South America, Siam weed has spread throughout the tropical and subtropical areas of the world (see Figure 1).

It is now a major weed that is widespread in central and western Africa, tropical America, India and South-East Asia.

Siam weed is still spreading rapidly, particularly through the Philippines, south-west China and South Africa. Especially worrying is its spread through our near neighbours Papua New Guinea and eastern Indonesia.

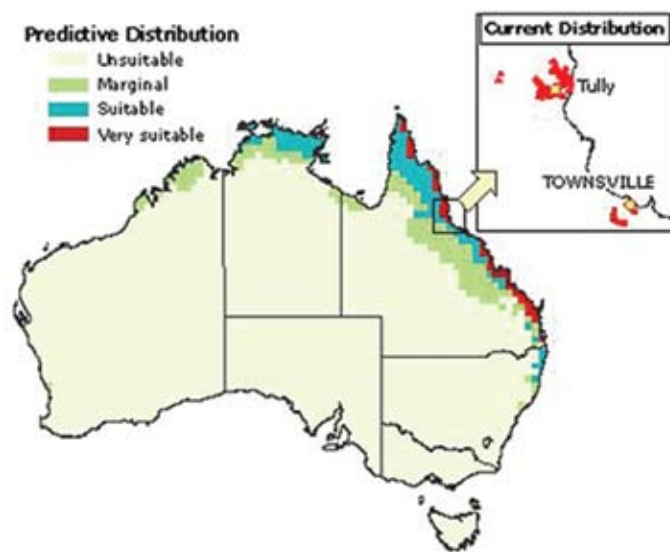
**Figure 1 Worldwide distribution of Siam weed**



While Siam weed is particularly suited to highly productive land types and grows easily along watercourses, foreshores and swamps, it has also been found growing on granite hillsides. Siam weed is generally found in areas where rainfall exceeds 600 mm per annum. In Australia, this would be throughout coastal Queensland, New South Wales, the Northern Territory, north Western Australia and along the West Australian coast (see Figure 2).

Siam weed has been found in several locations extending 180 km from the original sites in the Tully/Bingil Bay area.

**Figure 2 Actual and potential distribution of Siam weed**



### Control

Queensland Primary Industries and Fisheries' strategic control team is working with other government agencies and the community to eradicate this weed. In 2005, funds were allocated to undertake a national Siam weed survey to establish the full extent of the problem.

It is important that Siam weed be contained to currently infested areas. This can be achieved by:

- washing down vehicles, machinery, and equipment when leaving known Siam-infested areas
- cleaning all clothing, shoes and camping gear before leaving an area known to be infested with Siam weed
- quarantine of livestock for at least one week before they leave a Siam-infested property
- not removing sand or soil that may be contaminated
- requesting a weed hygiene declaration when buying anything that may be contaminated with Siam weed seed.

Early detection and eradication are vital.

To assist in reducing the spread of Siam weed seed, insist on vehicle and machinery wash downs and obtain a weed hygiene declaration from contractors. For further information visit [www.dpi.qld.gov.au](http://www.dpi.qld.gov.au)

## Biological control

Although biological control research has been initiated overseas and some effective agents have been found, establishment of these agents has been relatively poor. Biological control seldom kills all plants.

## Mechanical control

Mechanical removal of the basal/root ball is very effective and recommended for smaller infestations. However, it is extremely important to make sure the removed plant does not remain in contact with soil, as any contact will result in the plant re-shooting.

## Herbicide control

Chemical application at the correct rates, and before flowering, results in excellent kills (see Table 1 for approved herbicides and spray rates). Always read the label before using any herbicide.

## Further information

Further information is available from your local government office, or from your local primary industries and fisheries biosecurity officer: contact details are available through 13 25 23.

**Table 1 Herbicides registered for the control of Siam weed**

Herbicide	Product name	Rate	Comments
Picloram + triclopyr	Grazon DS	350 ml–100 L water + BS wetting agent @ 100 ml–100 L	Overall spray, spraying to point of run-off

Fact sheets are available from Queensland Primary Industries and Fisheries service centres and the Queensland Primary Industries and Fisheries Business Information Centre (telephone 13 25 23). Check our website at [www.dpi.qld.gov.au](http://www.dpi.qld.gov.au) to ensure you have the latest version of this fact sheet. The control methods referred to in this pest fact should be used in accordance with the restrictions (federal and state legislation, and local government laws) directly or indirectly related to each control method. These restrictions may prevent the use of one or more of the methods referred to, depending on individual circumstances. While every care is taken to ensure the accuracy of this information, Queensland Primary Industries and Fisheries does not invite reliance upon it, nor accept responsibility for any loss or damage caused by actions based on it.