



1. Habit with light green fertile fronds. 2. Close-up of sterile frond segments. 3. Close-up of spores on undersides of fertile frond segments. 4. Wiry stems and fertile fronds with small lobed segments.



Japanese Climbing Fern (*Lygodium japonicum*)

Introduced

Not Declared

Japanese Climbing Fern is a serious weed in the south-eastern parts of the USA, and is also beginning to become established as a weed in northern and eastern Australia. This fern is easily confused with some of our native climbing ferns, but it has been introduced from Asia for cultivation as a garden ornamental.

Distribution

This attractive fern is cultivated in the tropical and sub-tropical regions of Australia. However, in recent years, it has been reported becoming naturalised in the coastal districts of Queensland, the northern parts of the Northern Territory, and in the Sydney region.

There are a few early records of this species from northern Australia, however most records of this species becoming naturalised been reported in south-eastern Queensland since the mid 1990s. In particular, there are several records from the Sunshine Coast and Brisbane areas in the last ten years.

Description

A long-lived, vine-like, fern with a creeping or climbing habit that can quickly smother shrubs and trees. The very slender stems are wiry in nature and can reach lengths of up to 25 m. Its fronds are divided into numerous small light green segments that are elongated or triangular in shape (3-8 cm long and 1-2 cm wide). Frond segments that do not bear any spores have entire or slightly lobed margins, while those that bear spores are fringed with several small lobes (1-5 mm long). The spores are borne in clusters on the frond segments, and are only produced on the undersides of the small fringing lobes. These spore clusters turn from green to yellowish or brownish in colour as they mature.

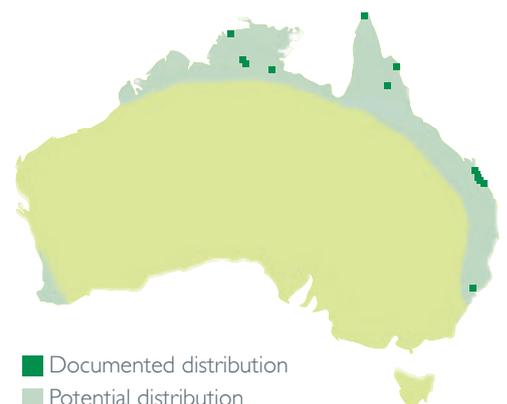
The flowers are arranged in short clusters (i.e. racemes) 1-5 cm long that emerge from two small sheath-like structures. Each cluster contains 2-10 small flowers, which bloom approximately three hours after sunrise and wilt by early afternoon. The delicate white or pale blue flowers have six 'petals' (3-6.5 mm long), with one of the petals having yellow or greenish markings at its base. They also have three stamens, two of which are small with yellow anthers, while the third is longer with a greyish-blue anther. The fruit is a small capsule containing 8-14 tiny winged seeds less than 1mm long.

Quick Facts

- > A rampant fern that climbs up into the forest canopy
- > Fronds have wiry stems and are divided into numerous segments
- > Segments are elongated in shape with the terminal one much longer
- > Those segments bearing spores are fringed with small lobes

Habitat

Japanese Climbing Fern grows in forests, along ditches and rivers, in forestry plantations, along roadsides and in other disturbed sites. It is particularly common in damp shady locations, such as the edges of swamps, marshes, lakes and creeks.



■ Documented distribution
■ Potential distribution



1. Climbing habit growing with other vines. 2. Growing in bushland along Mimosa Creek in Brisbane.

Reproduction and Dispersal

This species reproduces by long-lived tiny spores that are produced in vast quantities in summer and autumn. These spores easily become attached to animals, clothes, vehicles or equipment. They can also be carried long distances by wind or be dispersed in garden waste. Japanese Climbing Fern also spreads vegetatively by creeping stems located 1-3 cm below the soil surface.

Why is it an Emerging Threat?

Japanese Climbing Fern twines around the stems and branches of trees and shrubs and can reach up into the canopy of forests. It can form tangled masses of dense vegetation which can eliminate the underlying vegetation and engulf larger trees. Because of its ability to out-compete native vegetation, it is of particular concern in natural and conservation areas where the protection of remnant populations of native species is critical. It is also very problematic in slash pine plantations in the USA.

Control Methods

Small patches of Japanese Climbing Fern can be hand-pulled and machinery can be used to remove the large mats of foliage from vegetation. However it will quickly regrow from creeping stems below the soil, unless these are also removed. It will also re-sprout after winter frosts or after being burned.

Some considerable research has been conducted in the USA on the control of this species with herbicides. Formulations of Glyphosate and Metsulfuron-methyl, used alone or in combination, have been found to be most effective on this species. However, it has been noted that Metsulfuron-methyl treatments were less damaging to surrounding native vegetation than Glyphosate treatments. Operational experience has also indicated that the best results are obtained with application of these herbicides prior to peak spore release in autumn.

While no herbicides are currently registered for the control of Japanese Climbing Fern in Australia, the use of products containing Glyphosate, Metsulfuron-methyl, or a combination of these chemicals (e.g. Trounce) is permitted for the spot spraying of environmental weeds in Queensland via APVMA off-label permit number PER 11463 (<http://permits.apvma.gov.au/PER11463.PDF>). However, unless otherwise stated in this permit, the use of the product must be in accordance with the instructions on its label. Within other state boundaries, it is recommended that all managers consult any relevant permits or government legislation applicable to their region.

The control methods referred to in Weed Watch™ 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 utilisation 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, Technigro does not invite reliance upon it, nor accept responsibility for any loss or damage caused by actions based on it.

This information has been developed with the assistance of Dr Sheldon Navie. Photographs are also courtesy of Dr Sheldon Navie © Technigro Australia Pty Ltd 2013

Look a-likes

Japanese Climbing Fern is very similar to some closely related native ferns including Climbing Snake Fern (*Lygodium microphyllum*). However, Japanese Climbing Fern has membranous light green fronds that are usually lobed and elongated in shape, while Climbing Snake Fern has leathery pale green fronds that are usually shorter and un-lobed.



Top: Broader pale green fronds of Climbing Snake Fern.

Bottom: Close-up of fertile frond segments.