

Field Bindweed

Convolvulus arvensis



TAMAR VALLEY
Weed Strategy Working Group

everybody's problem - our plan

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Plant Description

Family: *Convolvulaceae*

Botanical Name: *Convolvulus arvensis* L.

Origin: Europe, Asia and North Africa.

Growth Habit: Field Bindweed grows long tangling stems, which can cover areas of up to 2m in diameter. Main growth is during Spring and Summer.

Type of Plant: Field Bindweed is a perennial creeping vine.

Flowers: The flowers are trumpet like in shape and colour ranges from white to pink tinged.

Fruit/Seeds: Seeds are produced in a pointed capsule. Seed production is high in field bindweed with approximately 400 seeds per plant produced per annum. Seeds are hard coated prolonging seed life upwards of 50 years in cool, dry and dark conditions. Most field seed banks exist for approximately 20 years (Parsons & Cuthbertson 2001).



Close up of flower of Field Bindweed (Photo: Unknown)

Plant Distribution & Dispersal

Dispersal: Bindweed is spread by seed and roots. Seeds, which can germinate at any time of the year, contaminate fodder, machinery and grain, and often remain viable after passing through birds and animals. Cultivation readily spreads viable root fragments (Parsons & Cuthbertson 2001).

Distribution: Field bindweed is thought to have been introduced to Australia in the early 1800s, but the reason for this is unknown (Parsons & Cuthbertson 2001).

Field bindweed is now established in all states of Australia except the Northern Territory. In Tasmania it is commonly seen on roadsides, in fallow areas, and on watercourses (Parsons & Cuthbertson 2001).

Bindweed is found in gardens, run down pastures, amongst many crops, vineyards and waste places. Bindweeds are also invasive in native vegetation, finding niches in riparian zones displacing native Bindweeds and in other bushlands (Parsons & Cuthbertson 2001).

Weed Status:

- Field Bindweed is not a declared weed in Tasmania.



Inflorescence of Field Bindweed flowers. (Photo: Unknown)

Weed Impacts

- Bindweed can be a very competitive plant in many crops and vineyards, where it reduces production and interferes with harvesting.
- In natural environments Field Bindweed out-competes the native Bindweeds for light and space, while impacting on other plant species habitat.. Because of its climbing ability it is able to invade across various levels of a plant community from ground level to tree tops.
- Field Bindweed has little fodder value but may be grazed as a means of weed management through biomass reduction. However, possible photosensitizing of grazing livestock may occur (Parsons & Cuthbertson 2001).

Control Methods

Control	Time Applicable	Notes
GRUBBING	All year	Isolated plants may be manually
HERBICIDE	Spring, Summer, Autumn	Herbicides registered in Tasmania include MCPA, triclopyr and glyphosate. If the bindweed is in a crop, consult the D.P.I.W.E. for more specific information.

N.B. The herbicides mentioned on this documents may not necessarily be registered for use on the plant referred to. **Always check the herbicide label before use.**

Botanical Diagram

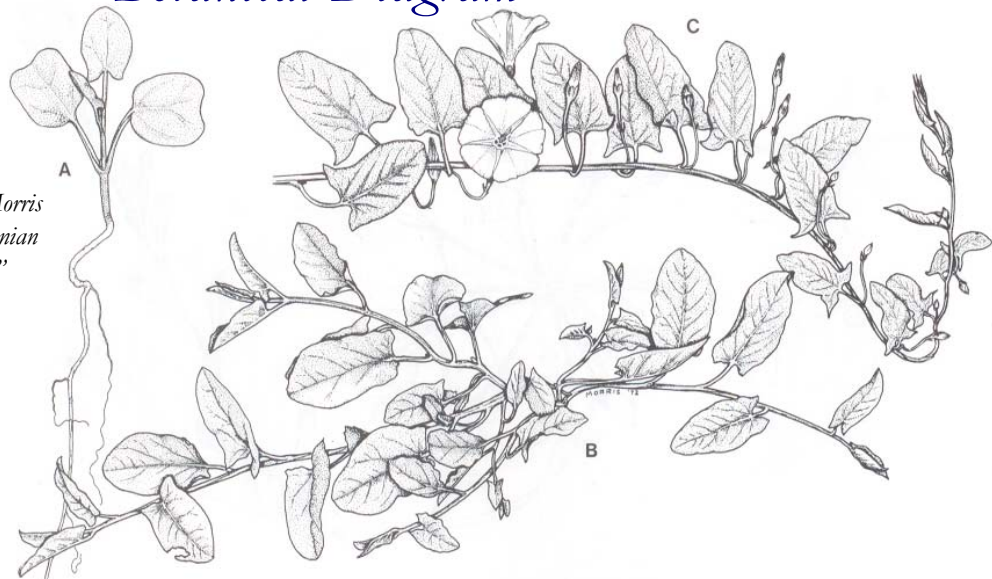


Illustration by D.I. Morris (1975) from "Tasmanian Weed Handbook"

Fig. 64 *Convolvulus arvensis*.
A. seedling; B. young plant; c. flowering branch:
Flower White Tinged with Red



Swamp Bindweed
(*Calystegia sepium*)
(Photo: R.Schabinger)

Similar Plants

Bindweeds are in the *Convolvulaceae* family, and are best identified with the garden favourite “Morning Glories” (*Ipomoea* spp.), with often brilliant blue or pink flowers. Morning Glories and exotic Bindweeds are highly invasive and detrimental to bushlands and riparian vegetation. “Bindweeds all have alternate leaves, and are characterised by showy white or pale pink funnel-shaped flowers, usually appearing in Summer (R.Schabinger 2002).”

Three Bindweeds likely to be encountered in the Tamar River area of Tasmania, are the exotic *Convolvulus arvensis* and two species of *Calystegia*, the native *C. sepium* and the exotic *C. silvatica*. The genera *Convolvulus* and *Calystegia* can be distinguished by their floral characteristics :

- *Calystegia* species have a pair of large bracteoles that overlap the calyx, whereas
- *Convolvulus* species have very small bracteoles that are distant from the calyx.

The distinct differences can be compared in the plant descriptions and images provided by the Threatened Species Unit (see below) (all information courtesy of R.Schabinger 2002).

Spot the difference

SWAMP BINDWEED

Calystegia sepium

NATIVE

Leaves 4-12 cm long, ovate to lanceolate (shaped like an arrowhead). Flowers solitary, corolla 4-6 cm long. Bracteoles 1.5-2 cm long, not inflated at base and barely overlapping; apex acute.

GREAT BINDWEED

Calystegia silvatica

EXOTIC

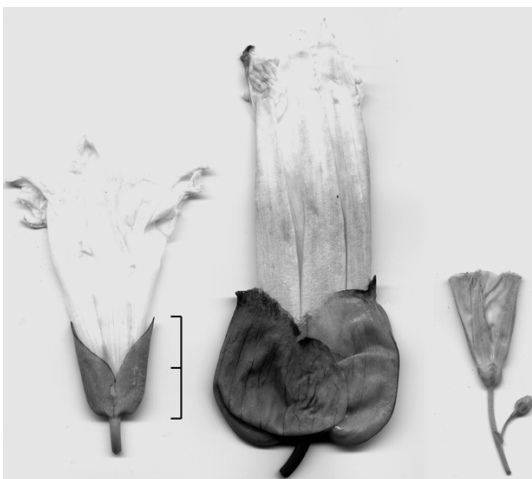
Leaves 5-12 cm long, ovate to broad-ovate, base cordate. Flowers solitary, corolla 4-7 cm long. Bracteoles 2-3.5 cm long, inflated at base and overlapping for nearly their entire length; apex rounded to emarginate.

FIELD BINDWEED

Convolvulus arvensis

EXOTIC

Leaves 2-6 cm long, lanceolate to ovate, base hastate. Single-flowered, sometimes 2-3 flowered, corolla 2-3 cm long. Bracteoles very small, distant from calyx.



Leaf and bracteole characters are shown above for *Calystegia sepium* (left), *Calystegia silvatica* (middle), and *Convolvulus arvensis* (right). The scale bar unit = 1 cm in each case. (Photos: R.Schabinger 2001).



Swamp Bindweed
(*Calystegia sepium*)
(Photo: R.Schabinger)

A Weed by Any Other Name

Swamp Bindweed (pictured left) is listed in the schedules of the Tasmanian *Threatened Species Protection Act 1995*, and is declared *endangered*. However, Swamp Bindweed is also found in a number of European countries and states in the U.S.A., and is known as False Hedge Bindweed or Wild Morning Glory. Documentation makes it unclear whether the False Hedge Bindweed is also native to the Northern Hemisphere, or is a displaced endemic species of Tasmania. In the States and Europe it is a listed pest of agricultural field cropping and horticultural nursery fields. The distribution of this (assumed) Australian native is considered to be of high economic impact to the agricultural communities.

Trivia: Research into plant properties and application in pharmaceutical science has also isolated lectins (carbohydrate binding proteins) from *Calystegia sepium*. Lectins are known to cause cancer in most cases, but researchers look to many plant species as a potential source for cancer cure.



Great Bindweed
(*Calystegia silvatica*)
(Photo: R.Schabinger)

Further References

Internet:

Dept. of Primary Industries, Water and Environment (Tasmania):

www.dpiwe.tas.gov.au

Threatened Species Unit (Tasmania):

www.dpiwe.tas.gov.au

National Weed Strategy:

www.weeds.org.au

CRC for Weed Management:

www.waite.adelaide.edu.au/CRCWMS/

Rutgers Cooperative Extension:

www.rce.rutgers.edu

Books:

Hyde-Wyatt, B.H. & Morris, D.I. (1975) *Tasmanian Weed Handbook*. Department of Agriculture Tasmania

Parsons, W.T. & Cuthbertson, E.G. (2001) *Noxious Weeds of Australia. Second Edition*. CSIRO Publishing, Victoria Australia

Special Thanks to the Threatened Species Unit (Tasmania) for providing (and allowing the use of) their results from extensive investigation of exotic and native bindweed comparisons.

Thanks also to Cindy Hanson, Andrew Crane, Richard Schabinger and Anna Povey for technical and editorial comments.