

Weed Risk Assessment: *Cytisus multiflorus*

1. Plant Details

Taxonomy: *Cytisus multiflorus* (L'Her.) Sweet. Synonym: *C. albus*, *Spartium multiflorum*. Family: Fabaceae

Common names: white Spanish broom.

Origins: Native to Spain, Portugal and France

Distribution: Naturalised in New Zealand, the United States of America and Australia.

Description:

A large shrub reaching 3 m tall. Stems are green and striped. Leaves occur in groups of three leaflets on the lower branches while single leaflets occur on higher branches. Stems and leaves are covered in short hairs which fall off at maturity. Flowers are white, pea-like and have a pink streak at the base. The seed pods are also pea-like and covered in short hairs. The pods turn black when mature and release 3-7 seeds explosively. Seeds are small and olive to brown (CRC Australian Weed Management, 2003).



Biology and ecology:

Habitat. *C. multiflorus* is thought to prefer warm dry conditions that occur in much of temperate Australia.

Life cycle. *C. multiflorus* flowers prolifically in spring but only a small proportion of flowers set fruit. Pods ripen over summer and seeds are released as pods dry out. The seeds germinate with autumn rains. Plants grow throughout the year if conditions are favourable. They do not usually set seed until they are at least three years old (CRC Australian Weed Management, 2003).

Reproduction and dispersal. Reproduction occurs via seeds (Blood, 2001). Seed is thought to be long-lived (CRC Australian Weed Management, 2003). Dispersal occurs when seed is dehisced within a metre radius of the parent but seeds may also be moved in contaminated soil, vehicles, animals and by water. Human assisted dispersal occurs via the ornamental plant trade and garden waste dumping.

Hybridisation. There is limited information about hybridisation of *C. multiflorus*. However, it is described as hybridising with near relative *C. scoparius* (Blood, 2001) though this is not confirmed.

Competition. *C. multiflorus* is generally described as highly competitive because of its ability to colonise rapidly, fix nitrogen and because its growth habit allows it to form dense, impenetrable thickets that exclude other plants.

Harmful properties: Thickets of *C. multiflorus* may harbour pest animals and restrict access to water. Seeds are poisonous (CRC Australian Weed Management, 2003).

Economic benefit: *C. multiflorus* attained its current distribution largely through the ornamental plant trade and it continues to be promoted and sold for its showy flowers in many countries, including Australia.



2. Weed Risk

World weed status

C. multiflorus is a woody weed in New Zealand and the United States. It is not regulated anywhere in the world (check NZ)

Australian weed status

C. multiflorus is naturalised in the Creswick and Castlemaine in central Victoria. It also occurred in the Mt Lofty Ranges in South Australia but has since been eradicated. It is not regulated in any State or Territory and it is permitted entry to Australia (Weeds Australia database). It is one of 28 species listed on the national *Alert List for Environmental Weeds*. Groves et al., (2003) list it as a major environmental weed in three or fewer Australian locations.

Weed potential in Tasmania.

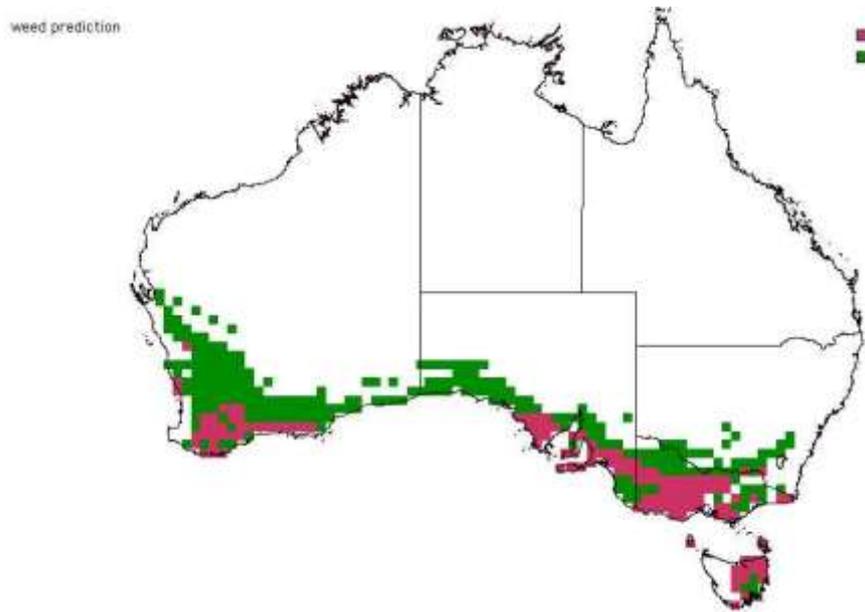
C. multiflorus is not naturalised in Tasmania. The sale status of this plant is not known but it is believed to be available.

Climate matching indicates the plant is likely to grow very well in a range of Tasmanian environments. The following analyses indicate the weed potential of *C. multiflorus* in Tasmania is significant.

Weed risk assessment

Weed risk assessment undertaken by DPIWE involves use of a point scoring system devised by Pheloung (1996). *C. multiflorus* scores 18 on a scale that is positively correlated to weediness. The nominal score for rejection of a plant on this scale is 7 or greater (see Appendix 1 for risk assessment scoring).

Potential distribution
of *Cytisus*
multiflorus in
Australia using
CLIMATE
(Pheloung, 1995)



3. Weed Impact Assessment

Weed impact assessment is based on the DPIWE scoring system designed for that purpose. *B.C. multiflorus* scores xx points on a scale where 4 points or more indicates a plant has significant potential impact. The impact scoring system requires that questions be answered with a particular land use and density in mind. *C. multiflorus* was assessed for its potential impacts upon natural environments at moderate to high densities.

Economic impact. The economic impact of *C. multiflorus* in Tasmania could manifest in agricultural as well as natural environments. Whilst unlikely to establish in regularly cultivated areas, it has a capacity to invade pasture and forestry plantations. Whilst these effects are likely to be limited to poorly maintained pastures, the consequence of land owners failing to control the plant would include a larger source of seed for potential distribution to natural areas. In addition, the habit of the plant means uncontrolled infestations may form a barrier to stock, vehicular and people movement, especially along riparian areas.

Environmental impact: *C. multiflorus* is described as invasive in natural environments due to its colonizing and dispersal ability, ability to fix nitrogen and its capacity to persist via long-lived seed. It appears to have significant potential to replace native species in Tasmanian forest and grassland communities, disturbed or undisturbed. Tasmania also has large populations of the highly invasive *C. scoparius* so potential hybridisation between the two poses a particular threat in that a hybrid is likely to be more robust than the parents.

Social impact. *C. multiflorus* is unlikely to have significant social impacts in Tasmania although it may render certain natural areas less useful for recreation or tourism.

4. Management Feasibility.

Since this plant is not naturalised in Tasmania at this time, management feasibility is not an issue. However, maintaining freedom from *C. multiflorus* is highly dependent upon effective import prohibition, early detection and reporting of any occurrences and, community and industry education.

5. Declaration Recommendation.

C. multiflorus appears to have potential to establish, reach moderate to high densities and cause environmental significant harm in certain vegetation communities in Tasmania. It may also become a weed of poor pastures, roadsides and plantations. Therefore it should be nominated for declaration under the *Weed Management Act 1999*. This will support removal of the plant from trade and timely eradication of any occurrences. It will also support national efforts to eradicate and minimise the occurrence and impact of this plant.

6. References.

Blood, K., 2001, *Environmental weeds. A field guide for SE Australia*. CH Jerram, Science Publishers, Mt Waverley, Victoria.

CRC Australian Weed Management, 2003, *Weed Management Guide. White Spanish broom, (Cytisus multiflorus)*. CRCAWM, Adelaide.

Groves, R.H. (Convenor), Hosking, J.R., Batianoff, G.N., Cooke, D.A., Cowie, I.D., Johnson, R.W., Keighery, G.J., Lepschi, B.J., Mitchell, A.A., Moerkerk, M., Randall, R.P., Rozefelds, A.C., Walsh, N.G. and Waterhouse, B.M., 2003, *Weed categories for natural and agricultural ecosystem management*. Bureau of Rural Sciences, Canberra.

Pheloung, P.C., 1995, *Determining the weed potential of new plant introductions to Australia*. A report commissioned by the Australian Weeds Committee. Agriculture Western Australia.

Pheloung, P.C., 1996, *Climate. A system to predict the distribution of an organism based on climate preference*. Agriculture Western Australia.

Plants for a Future Database at www.sca.leeds.ac.uk

USDA, ARS, National Genetic Resources Program. Germplasm Resources Information Network (GRIN), online database at www.ars.grin.gov/cgi-bin/ngps/html, National Germplasm Resources Laboratory, Beltsville, Maryland.