

Weed Risk Assessment: *Leycesteria formosa*

1. Plant Details

Taxonomy: *Leycesteria formosa* Wall. Family: Caprifoliaceae

Common names: Himalayan honeysuckle, Elisha's tears, Cape fuchsia, whistle stick, flowering nutmeg, spiderwort.

Origins: Native to Himalayas (GRIN database).

Naturalised distribution: Naturalised in the British Isles, the United States of America, Australia, New Zealand, (GRIN database).

Description: A deciduous or semi-evergreen shrub growing 3-5 m. Stems are hollow and smooth with a waxy surface that disappears with age. Leaves are opposite, shortly stalked, oval or heart shaped and taper to a narrow point. Flowers are arranged in drooping spikes near the ends of branches. Petals are white to purple and joined to form a funnel. Bracts are conspicuous, deep purple to red. The fruit are crimson berries containing about 100 seeds. The root system is extensive and rigorous (Blood, 2001).



Biology and ecology:

Habitat. *L. formosa* prefers sheltered locations in high rainfall areas and occurs in gullies, along stream sides. It is frost and cold tolerant, grows on a variety of soils in part sun or shade and recovers well from fire (Blood, 2001).

Life cycle. *L. formosa* begins to reproduce at approximately 2 years (Blood, 2001). Flowers are

produced in spring and fruit set occurs during summer to autumn. Seeds germinate the following spring. Plants may live to at least 60 years old.

Reproduction and dispersal. Reproduction occurs via seeds, stem layering, root fragments and possibly suckers. This plant is also able to regenerate from the rootstock after removal of shoots. Seed germination occurs through spring and summer, most prolifically on disturbed soils. Seeds can also germinate in low light conditions in marginally disturbed sites (eg. lyrebird nests). Dispersal is by water, birds, deer, machinery, foxes, contaminated soil and dumped garden waste (Blood, 2001).

Hybridisation. There is limited information about hybridisation of *L. formosa*.

Competition. *L. formosa* is generally described as highly competitive because of its shade tolerance, ability to colonise disturbed areas rapidly and because its growth habit allows it to form dense, impenetrable thickets that exclude other plants.

Harmful properties. Fruit may be poisonous (Blood, 2001).

Economic benefit: *L. formosa* attained its current distribution largely through the ornamental plant trade and it continues to be promoted and sold for its showy flowers and berries.

2. Weed Risk

World weed status

L. formosa is a weed in a number of temperate areas. It is regulated in New Zealand.

Australian weed status

L. formosa is naturalised in the, New South Wales, Victoria, Tasmania and possibly the Australian Capital Territory. It is not regulated in any State or Territory and it is permitted entry to Australia (Weeds Australia database). Groves et al. (2003) list it as a major environmental weed in more than four locations in Australia.

Weed potential in Tasmania.

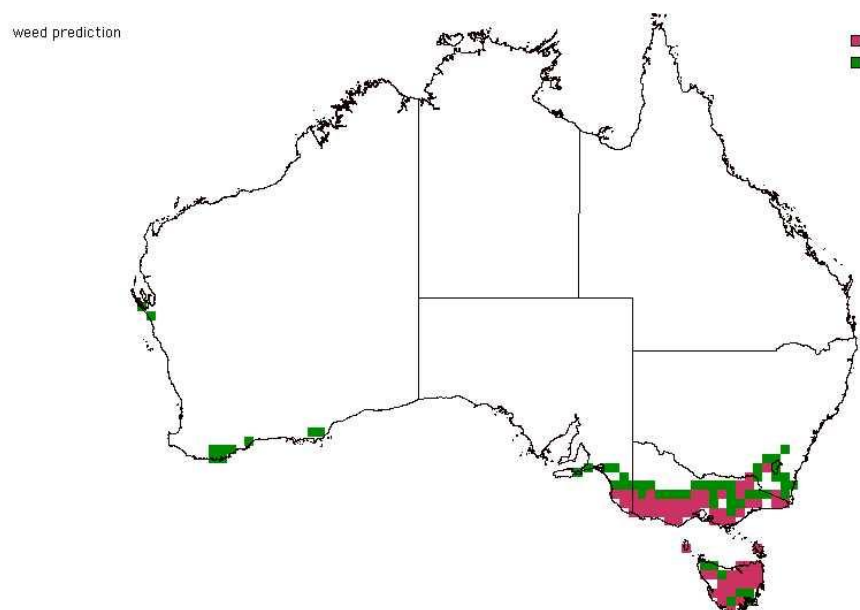
L. formosa is naturalised in Tasmania. Populations occur in all major regions. Especially large infestations occur near Queenstown in the west. The plant is not commonly sold in Tasmania but is present in many gardens.

Climate matching indicates the plant is likely to grow well in a range of Tasmanian environments, mostly in cooler, moist situations. The following analyses indicate the weed potential of *L. formosa* in Tasmania is significant.

Weed risk assessment

Weed risk assessment undertaken by DPIWE involves use of a point scoring system devised by Pheloung (1996). *L. formosa* scores 17 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 *Leycesteria formosa*
in Australia using
CLIMATE (Pheloung,
1995)



3. Weed Impact Assessment

Weed impact assessment is based on the DPIWE scoring system designed for that *L. formosa* scores 6 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. *L. formosa* was assessed for its potential impacts upon natural environments at moderate to high densities.

Economic impact. The economic impact of *L. formosa* in Tasmania is likely to be most pronounced in native vegetation where it could severely compromise the natural values important to eco-tourism. 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: *L. formosa* is described as invasive in natural environments due to its colonising and dispersal ability and shade tolerance. It appears to have significant potential to replace native species in Tasmanian moist forest communities and would presumably also alter animal feeding patterns due to the abundance of fruit produced during summer.

Social impact. *L. formosa* is unlikely to have significant social impacts in Tasmania.

4. Management Feasibility.

Weed eradication assessment is based on the DPIWE scoring system designed for that purpose. *L. formosa* scores 5 points on a scale where 6 points or more indicates there is potential for the plant to be eradicated successfully from the entire state. Therefore, the likelihood of successful eradication seems low at this time.

Weed containment assessment is based on a separate DPIWE scoring system. *L. formosa* scores 5 points on a scale where 5 points indicate there is potential for the plants to be successfully contained within the municipalities in which they currently occur, avoiding spread to un-infested municipalities.

Current distribution: *L. formosa* is known sporadically in the north and is present in almost all municipalities in the north west and in the south, with the possible exception of Southern Midlands, Brighton and the Central Highlands. The worst infestations occur in wetter, cooler areas, typically but not exclusively in gully situations. West Coast municipality probably supports the largest *L. formosa* infestations. Further survey work is required.

Control Options: Control of this species along corridors, creation of buffers around affected areas and eradication of outliers is thought to be feasible although foliar application of herbicide carries risks of off-target damage due to the tall habit of the plant.

Potential for long-term land holder involvement: The potential for land-holders to commit to long-term management of this species is predicted to be low to moderate because in most cases the land owner is the Crown. Nonetheless, awareness and education activities to reduce the popularity of the species as a garden plant should assist in this respect.

Propagule escape from containment areas: Escape from containment areas may be significant depending on the amount of bird activity. Also, containment will not have been achieved if plants remain at the edge of streams as water is another effective dispersal agent.

Time required to achieve control of outliers, corridor populations and to establish buffers: Treatment over 5-10 years is estimated to achieve effective containment.

Compliance Issues or Conflicts of Interest: The most important compliance issue is likely to arise in relation to people who value this plant for its ornamental appeal and who therefore will be reluctant to remove it from their gardens. There may also be a conflict of interest with people wishing to sell the plant. Both situations can be addressed by referring to the range of alternatives available.

Containment Feasibility: The containment of *L. formosa* to municipalities where it is widespread at this time appears achievable and desirable. Occurrences in other municipalities, subject to survey work, should be eradicated.

5. Declaration Recommendation.

L. formosa appears to have potential to establish, reach moderate to high densities and cause significant harm in certain vegetation communities in Tasmania. Therefore it should be nominated for declaration under the *Weed Management Act 1999* with a view to containment in those municipalities where it is widespread and eradication from those municipalities in which its distribution is limited.

6. References.

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

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.

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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.