

Weed Risk Assessment: *Senecio glastifolius*

1. Plant Details

Taxonomy: *Senecio glastifolius* L. Family: Asteraceae.

Common names: holly leaved senecio, water dissel, large senecio, pink ragwort.

Origins: Native to Cape region of South Africa.

Distribution: Naturalised in New Zealand and Australia.

Description: *S. glastifolius* is a stout perennial that grows to 1-1.5m tall. It is occasionally an annual. The stems can be 80mm in diameter at the woody base of older plants. All stems are widely branched and produce flowers. Leaves are serrated or coarsely toothed near the stalk, making this plant prickly to touch – hence its common name. Lower leaves are up to 100–150mm long while upper leaves are 30-50mm long. The plant can produce several hundred purple flowers with small yellow bracts. Seed heads are white, fluffy balls at maturity (CRC Australian Weed Management, 2003).



Biology and ecology:

Habitat. In its native range *S. glastifolius* is restricted to a narrow coastal strip of the eastern Cape area at latitude 34° and between longitude 21°-26° (Williams et al., 1999). It is a component of the fynbos heath lands and riparian areas, typically with *Restio* species and proteas (van der Walt, 2002). It also grows in karroid scrub, along streambank and on marshy ground and is often found on rocky hillsides. It is most frequent in wet areas. In New Zealand it grows on hillsides, coastal dunes (especially swales and other stabilised dune types), roadsides and other disturbed areas, mostly on the North Island. In Australia it infests banksia woodland in coastal areas in Western Australia and, the central coast of New South Wales (CRC Australian Weed Management, 2003). It appears to favour high rainfall areas receiving 1000-1400mm p.a., in winter or all year round and is mostly found between 18 and 330m asl. It grows on wet or dry substrates and on nutrient poor, deep, sandy soils (Williams et al., 1999).

Life cycle. Germination occurs from autumn to winter, generally in wetter areas. Fire and disturbance such as slashing or soil cultivation are believed to promote germination. Existing plants can also grow at this time provided enough water is available. Flowering occurs in late spring and by summer/autumn the seed is mature (CRC Australian Weed Management, 2003). Plants are thought to survive for less than 4 years (Williams et al., 1999).

Reproduction and dispersal. Reproduction occurs via seeds and vegetatively. Bees pollinate flowers and mature seeds are spread by wind or through movement of contaminated soil. Seeds germinate in pulses and are thought to remain viable for several years (Williams et al., 1999).

Fallen branches may also take root and produce new plants though this is not thought to be a significant mechanism for persistence and survival (Williams et al., 1999). Though not common in the trade, *S. glastifolius* may have begun in Australia as a garden plant so any continuing swapping or deliberate distribution may also contribute to spread (CRC Australian Weed Management, 2003).

Hybridisation. There is limited information about hybridisation of *S. glastifolius*.

Competition. The New Zealand and Western Australian experiences indicate *S. glastifolius* has potential to become a significant environmental weed. In New Zealand it has spread rapidly over the past 20 years and occupies a range of mostly coastal sites, particularly in damp, open situations where it dominates understorey vegetation (Williams et al., 1999). In Western Australia, *S. glastifolius* has travelled 20km from the original planting in less than 20 years. In addition, the plant is known as a competitive species in its natural range and is becoming a weed of agricultural areas and disturbed sites. It is well known as a fire weed and frequent coloniser of disturbed areas as well as being troublesome in pastures and plantations (Williams et al., 1999, CRC for Australian Weed Management, 2003, van der Walt, 2002).

Harmful properties: None reported (CRC Australian Weed Management, 2003).

Economic benefit: *S. glastifolius* has little economic benefit apart from ornamental trade value.

2. Weed Risk

World weed status

S. glastifolius is a significant weed in New Zealand and in parts of its native range in South Africa.

Australian weed status

S. glastifolius is naturalised in Western Australia and is also recorded from New South Wales. It is not regulated in any state or territory. However it is listed on the Australian Government's *Alert List of Environmental Weeds* and as such is marked for eradication and due to be prohibited import to Australia (CRC Weed Management, 2003). Groves et al. (2003) list it as a major problem in three or fewer areas and note it has potential to spread to Victoria, South Australia and Tasmania.

Weed potential in Tasmania.

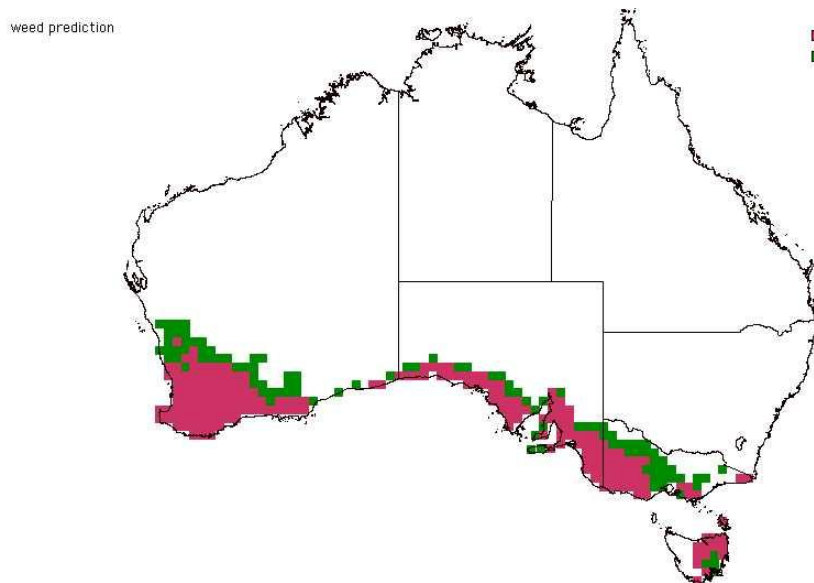
S. glastifolius is not naturalised in Tasmania at this time.

Climate analysis indicates the plant may grow well in warmer areas of Tasmania. The following analyses describe the weed potential of *S. glastifolius* in Tasmania.

Weed risk assessment

Weed risk assessment undertaken by DPIWE involves use of a point scoring system devised by Pheloung (1996). *S. glastifolius* scores 16 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 *Senecio glastifolius*
in Australia using
CLIMATE (Pheloung,
1995)



3. Weed Impact Assessment

Weed impact assessment is based on the DPIWE scoring system designed for that purpose. *S. glastifolius* scores x 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. *S. glastifolius* was assessed for its potential impacts upon natural environments at moderate densities.

Economic impact. The economic impact of *S. glastifolius* in Tasmania is mostly relevant to natural areas and roadsides, where its establishment would lead to greater cost burdens associated with control and removal. Whilst unlikely to invade well-managed pasture, any incursions in these situations would be undesirable (CRC Weed Management, 2003).

Environmental impact: *S. glastifolius* is described as having potential to be a serious environmental weed in south west Western Australia and other areas with a similar climate. In Tasmania it is unlikely to grow as well as it does in WA however any sized population would detract from the natural and aesthetic values of natural areas in this State. In particular, open wet environments area at risk.

Social impact. *S. glastifolius* is unlikely to have significant social impacts.

4. Management Feasibility.

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

5. Declaration Recommendation.

S. glastifolius appears to have potential to establish and cause environmental harm in certain native vegetation communities in Tasmania. It may also become a weed of poor pastures and roadsides. 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 incursions. It will also support national efforts to eradicate and minimise the impact of this plant.

6. References.

CRC Australian Weed Management, 2003, False yellowhead- *Dittrichia viscosa*. Alert List for Environmental Weeds.

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.scs.leeds.ac.uk

Van der Walt, L, 2002, Kirsterbosch national Botanical Garden at www.planzafrica

Weeds Australia Database at www.weeds.org.au

Williams, P.A., Ogle, C.C., Timmins, S.M., Cock, G., Reid, V., 1999, Biology and ecology of *Senecio glastifolius* and its spread and impacts in New Zealand. *Science for Conservation* (112), pp.23.