

Impact Assessment Record

Scientific name: *Solanum pseudocapsicum* L

Common name: Madeira winter cherry

| QUESTION | COMMENTS | RATING | CONFIDENCE |
|--|--|-----------|------------|
| Social | | | |
| 1. Restrict human access? | A herbaceous to somewhat woody perennial of 50- 200 cm height with a spread of 1 m (Weber, 2003; Shepherd, 2004). Can invade damp sclerophyll forest, riparian vegetation and warm temperate rainforests (Carr <i>et al</i> , 1992), forests and forest edges (Weber, 2003). Plant exudes an unpleasant odour (Weber, 2003). Stems are wiry and much branched (Roy <i>et al</i> , 1998). This plant is unlikely to restrict human access however can be a nuisance. | ML | MH |
| 2. Reduce tourism? | The plant produces bright attractive red berries that might be perceived as being aesthetically pleasing conversely the odour produced from plant might have negative impact on visitors. | ML | MH |
| 3. Injurious to people? | The majority of the compounds identified in the plant are known to be poisonous hence making both berries and leaves toxic to humans and animals (Aliero <i>et al</i> , 2006b). The berries if ingested have been reported to be fatal to humans and animals (Aliero <i>et al</i> , 2006b). | H | H |
| 4. Damage to cultural sites? | The plant does not cause any structural damage however dense fruiting populations may have a moderate visual effect. | ML | MH |
| Abiotic | | | |
| 5. Impact flow? | Although the plant is known to invade riparian environments it is not known to invade the water body or streambeds. | L | MH |
| 6. Impact water quality? | No noticeable effect on water quality. | L | MH |
| 7. Increase soil erosion? | The plant has the capacity to invade and transform areas by displacing existing natives and leaving area open to soil erosion. | ML | MH |
| 8. Reduce biomass? | There is no evidence from the literature studied that the plant alters the biomass of the community. | ML | MH |
| 9. Change fire regime? | There is no direct information on fire response of this plant. Therefore on the basis that the plant does not significantly alter the biomass of a community it can be concluded that it has a small or negligible effect on fire risk. | L | L |
| Community Habitat | | | |
| 10. Impact on composition (a) high value EVC | EVC= Grassy Forest (E); CMA= Corangamite; Bioregion= Otway Ranges; VH CLIMATE potential. Prefers well composted, moist, well drained soils in a protected position (Shepherd, 2004). Can invade damp sclerophyll forest, riparian vegetation and warm temperate rainforests (Carr <i>et al</i> , 1992), forests and forest edges (Weber, 2003). A herbaceous to somewhat woody perennial of 50- 200 cm height with a spread of 1 m (Weber, 2003, Shepherd, 2004). Small to medium shrub (Carr <i>et al</i> , 1992). The DSE (2004) defines describes small shrubs of grassy forests to comprise of 5% to the lifeforms within this EVC. Furthermore infestations of this species can | MH | MH |

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| | displace and shade out species of the lower stratum subsequently modifying ecosystem structure. | | |
| (b) medium value EVC | EVC= Riparian Forest (D); CMA= Glenelg Hopkins; Bioregion= Greater Grampians; VH CLIMATE potential. The DSE (2004) describes small shrubs to comprise of 1% to the lifeforms within the Riparian Forest EVC. The species prefers well composted, moist, well drained soils in a protected position (Shepherd, 2004). The species is intolerable to drought indicating that it is dependant on reliable and sufficient water input. Riparian Forests are regularly inundated and permanently moist (DSE, 2004) making them suitable environmental for optimal growth of this species enabling it to establish and displace existing species. | MH | MH |
| (c) low value EVC | EVC= Damp Forests (LC); CMA= West Gippsland; Bioregion= Highlands Southern Fall; VH CLIMATE potential. The species prefers well composted, moist, well drained soils in a protected position (Shepherd, 2004). The species is intolerable to drought indicating that it is dependant on reliable and sufficient water input. Riparian Forests are regularly inundated and permanently moist (DSE, 2004) making them suitable environmental for optimal growth of this species enabling it to establish and displace existing species. | MH | MH |
| 11. Impact on structure? | The species grows to the height of 2m hence affecting only up to the lower end of the mid stratum and the lower stratum. Images of infestations viewed online (North West Weeds, 2007) indicate that the species becomes abundant and forms dense patches that crowd out native plants and prevents shrub regeneration (Weber, 2003). Hence the species has the capacity to produce dense cover over other species in the lower stratum therefore it will still have some impact on structure on both under and mid story. | ML | ML |
| 12. Effect on threatened flora? | The impact on threatened flora is indeterminable. | MH | L |
| Fauna | | | |
| 13. Effect on threatened fauna? | The impact on threatened fauna is indeterminable. | MH | L |
| 14. Effect on non-threatened fauna? | Plant is usually ignored by livestock (Roy <i>et al</i> , 1998). Therefore can assume that it is not an attractive food for native fauna. | ML | L |
| 15. Benefits fauna? | Seeds are dispersed by ingestion of birds. It has been recorded that currawongs eat the berries (Buchanan, 1989). In winter the leaves remain green and very attractive (Aliero <i>et al</i> , 2006) to animals making it a possible food source despite being poisonous however probably not a reliable one. Therefore it may be that the dense populations of this plant may provide an additional food source. | MH | H |
| 16. Injurious to fauna? | The plant has been recorded to contain poisonous solanocapsine and alkaloids that are reported to be fatal to man and animals (Aliero <i>et al</i> , 2006b). It is avoided by livestock and native animals might do the same. Birds must have a degree of tolerance because they are the main seed dispersal vector. The plant is toxic in the flowering and fruiting stages for guinea pigs and rabbits and toxic to horses as well (Eckell, 1946). | H | H |

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| Pest Animal | | | |
| 17. Food source to pests? | A study conducted by Santos <i>et al</i> (2003) investigated the diet of the maned wolf (<i>Chrysocyon brachyurus</i>) in South America and found that <i>S. pseudocapsicum</i> made up a small percentage of this animals diet. This may suggest that foxes (<i>Vulpes vulpes</i>) may also eat fruit but again would comprise a minor component of diet. Furthermore it is noted in the literature (Buchanan, 1989) that the berries of this plant are readily ingested by Pied currawongs in suburban Sydney. Considering that this native species feeds on the berries it is highly likely that exotic species would do the same. | ML | H |
| 18. Provides harbor? | This species has the capacity to produce dense crowded populations hence it has the potential to provide temporary harbour for foxes and rabbits however due to its wiry structure at medium height may not be suitable for permanent harbour for pest animals. | MH | MH |
| Agriculture | | | |
| 19. Impact yield? | This is a weed that can invade rough pastures additionally it is a plant that is ignored by livestock. It has a large seed set and can produce large dense populations. It might reduce the production or vigour of other crops or plants by competing with them for water and nutrients. Despite the preceding statement there is no evidence that this species is a serious weed of agriculture. | ML | L |
| 20. Impact quality? | There is no evidence that it is a weed as agriculture. | ML | L |
| 21. Affect land value? | The literature is noted that it is found in rough pastures this suggests poor quality land value to begin with so may not alter the land value significantly. There is insufficient information to suggest the plants impact on land value would be greater than 10%. | M | L |
| 22. Change land use? | The plant is not considered a serious weed of agriculture therefore it would not cause serious alteration of land use. | L | L |
| 23. Increase harvest costs? | The plant is not a weed of agriculture. It is not likely to increase agricultural costs by increasing harvesting time or is not a potential contaminant in agricultural produce. | L | L |
| 24. Disease host/vector? | The plant is susceptible to a powdery mildew (<i>Erysiphe</i> sp) that occurred in greenhouse-grown tomato crops in southern England (Fletcher and Smewin, 1988). The plant has also been noted to harbour the new Psyllid-Yellows disease prevalent in potato and other solanaceous plants (Binkley, 1929). This disease can be transmitted from diseased tomato to healthy potato plants. The plant is also a possible host for the tomato moth <i>Scrobipalpula absoluta</i> (Galarza, 1984) and for the tomato leaf curl virus tested under glasshouse experiments (DPIF, 2006). | H | H |