**Impact Assessment Record**

Scientific name: *Polygala myrtifolia* L. Common name: Myrtle-leaf milkwort (Bellarine pea)

| QUESTION | COMMENTS | RATING | CONFIDENCE |
|---|---|---|---|
| **Social** | | | |
| 1. Restrict human access? | This evergreen shrub that reaches a height of 1.25 to 2 m, and maintains a tight, spherical canopy (Meerow and Ayala-Silva, 2005). It is a highly invasive species that is able to build up large populations rapidly and can form dense mixed age thickets (Muyt, 2001). It is a robust shrub with a tight spherical structure that can be a nuisance and may impede direct human access. | **ML** | **MH** |
| 2. Reduce tourism? | The plant produces an abundance of 2 to 3 cm long purple flowers and can flower all year round (Roy *et al*, 1998) making it quite visible to visitors who conversely might perceive the plant as attractive. The dense thickets may inhibit recreational activities. | **ML** | **M** |
| 3. Injurious to people? | No effect, no prickles no injuries. | **L** | **MH** |
| 4. Damage to cultural sites? | The plant does not cause any structural damage however dense consistent flowering populations (Roy *et al*, 1998) may have a moderate visual effect. | **ML** | **MH** |
| **Abiotic** | | | |
| 5. Impact flow? | Although this is a species of coastal areas it is not known to disturb water flow or water beds. Plant establishes in dune systems, coastal bluffs, shrublands and woodlands (Muyt, 2001). It prefers light, sandy, well-drained soils (DPI, 2007). The species is essentially terrestrial so it does not occur near a water body and have no effect on water flow. | **L** | **MH** |
| 6. Impact water quality? | Refer to comments in above question. No measurable effect on water quality. | **L** | **MH** |
| 7. Increase soil erosion? | The plant competes with native shrubs and shades out native ground flora reducing integrity of the bushland (Carter *et al*, 1990). The plant generally occurs in coastal areas where soil instability is common furthermore juvenile plants readily establish and form dense carpets under parent plants (Carter *et al*, 1990). Therefore the plant provides a level of soil stability within the areas it colonises. | **L** | **L** |
| 8. Reduce biomass? | The plant occupies vacant areas in the mid canopy. However being a displacing species direct replacement would be expected. | **ML** | **L** |
| 9. Change fire regime? | The plant is fire sensitive and killed by fire (Blood, 2001) however it germinates prolifically after disturbance such as fire (ESC, 2002) but not reliant on fire (Blood, 2001). On the basis that the biomass of a community remains stable where this plant establishes indicates that either frequency or intensity of fire risk will remain the same. No information on plants flammability characteristics. Unlikely that the plant will increase fire risk. | **L** | **L** |

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| **Community Habitat** | | | |
| 10. Impact on composition (a) high value EVC | EVC= Coastal tussock grassland (V); CMA= Corangamite; Bioregion= Otway Ranges; VH CLIMATE potential. This species has been found to establish and successfully invade coastal areas including dune systems and coastal bluffs (Carter *et al*, 1990; Muyt, 2001). The shrub maintains a tight spherical canopy and forms dense thickets that totally dominate the shrub canopy, overtaking native plant growth and preventing any overstory generation (Muyt, 2001). It is an aggressive, invasive and rapid growing species that dominates the understory in dry bush and coastal woodlands (ESC, 2002) subsequently significantly altering ecosystem composition within this stratum | **MH** | **MH** |
| (b) medium value EVC | EVC= Coastal sand heathland (R); CMA= West Gippsland; Bioregion= Wilsons Promotory; VH CLIMATE potential. This species has been found to establish and successfully invade coastal areas including dune systems and coastal bluffs (Carter *et al*, 1990; Muyt, 2001). The shrub maintains a tight spherical canopy and forms dense thickets that totally dominate the shrub canopy, overtaking native plant growth and preventing any overstory generation (Muyt, 2001). It is an aggressive, invasive and rapid growing species that dominates the understory in dry bush and coastal woodlands (ESC, 2002) subsequently significantly altering ecosystem composition within this stratum. | **MH** | **MH** |
| (c) low value EVC | EVC= Heathy Woodland (LC); CMA= Wimmera; Bioregion= Lowan Mallee; VH CLIMATE potential. Isolated satellite infestations occur in disturbed areas, extending into relatively undisturbed vegetation as a front (Carter *et al*, 1990).can invade dry coastal vegetation, heathland and heathy woodland, mallee shrubland, lowland, grassland and grassy woodland, dry sclerophyll forests and woodland and riparian vegetation (Carr *et al*, 1992). The DPI (2007) describes heathy woodland EVC within the Wimmera CMA as comprising of soils that are Quaternary sand sheets and low dunes of aeolian origin. The soils in the area are predominately deeply leached infertile sands. The species is known to do well in shallow soils over calcrete or deep calcareous sands (Carter *et al*, 1990) indicating that conditions within this EVC are conducive for good growth. The aggressive and invasive nature of the plant will smoother and displace native vegetation within the lower and potentially even the mid stratum. | **MH** | **MH** |
| 11. Impact on structure? | The species grows to heights of 2m and occupies gaps in the shrub stratum therefore only affecting species in the mid and understorey. Literature suggests that the species forms dense mixed aged thickets over other native species in the lower stratum (Muyt, 2001) subsequently displacing and transforming the species community in both the mid and lower strata. | **MH** | **MH** |
| 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** |

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| 14. Effect on non-threatened fauna? | It does not tolerate grazing and can only establish in areas where livestock have been excluded (Carter *et al* 1990). May provide an available food source for both livestock and native animals but its susceptibility to grazing might mean that it is not a reliable food source for livestock. | ML | L |
| 15. Benefits fauna? | In some areas the plant can flower all year round therefore can provide a year long food resource for birds (Muyt, 2001) and insects especially in times of food scarcity. | MH | MH |
| 16. Injurious to fauna? | The information studied suggests that the plant does not contain spines or burrs and is not toxic. | L | MH |
| **Pest Animal** | | | |
| 17. Food source to pests? | There is no evidence in the literature that suggests that the plant is a food source to pests. However its year long flowering regime may be an attractive food source for pest birds. Muyt (2001) notes that the seed is dispersed by birds but does not mention what species. | ML | L |
| 18. Provides harbor? | The plant can invade to form dense thick patches however not continuous. Its tight structure may have the capacity to harbour terrestrial pests such as foxes and rabbits. | MH | L |
| **Agriculture** | | | |
| 19. Impact yield? | No evidence in the literature suggests that this plant invades agricultural landscapes. | L | L |
| 20. Impact quality? | No evidence in the literature suggests that it is a weed of agriculture. | L | L |
| 21. Affect land value? | Affect to land value would be minimal because no evidence suggests that it is a weed of agriculture and it does not tolerate grazing. . | L | 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? | No information suggests that this plant is a disease vector or host | L | L |