

## Impact Assessment Record

Scientific name: *Phyla canescens* (Kunth) Greene

Common name: Lippia, Fog-fruit

QUESTION	COMMENTS	RATING	CONFIDENCE
<b>Social</b>			
1. Restrict human access?	As a low growing prostrate herb (Leigh & Walton 2004) it is unlikely to restrict human access.	<b>L</b>	<b>MH</b>
2. Reduce tourism?	In a QLD survey some people indicated that 'lippia detracts from the enjoyment gained from the land, partly in terms of impacts on recreation and partly through its mere presence (Elliot 2001 in Leigh & Walton 2004)'. Lippia causes the surfaces of playing fields to become slippery and can be potentially dangerous for sporting activities (Leigh & Walton 2004). Some recreational uses affected.	<b>MH</b>	<b>MH</b>
3. Injurious to people?	Nothing was found documented to suggest this species possesses any properties injurious to people.	<b>L</b>	<b>M</b>
4. Damage to cultural sites?	'It contributes to deep soil drying leading to bank slumping and erosion especially in cracking clays, resulting in damage to diversion banks, dam walls and roads (Julien et al 2004)'. Structural damage is likely to be moderate.	<b>MH</b>	<b>MH</b>
<b>Abiotic</b>			
5. Impact flow?	Its low growth is linked to an associated increase in the speed of floodwaters (Lucy et al 1995). Likely to cause a minor increase to surface flow.	<b>ML</b>	<b>MH</b>
6. Impact water quality?	Increased soil erosion, caused by lippia, could result in increased nutrient loading and stream water turbidity, which may contribute to an increase in algal blooms and eutrophication (Lucy et al 1995).	<b>MH</b>	<b>M</b>
7. Increase soil erosion?	Riverbanks overtaken by lippia often become extremely unstable with a greatly increased incidence of subsistence of sections of bank into the river (Lucy et al 1995), and 'as well as being locally damaging, this has severe implications in terms of downstream water quality and movement of soil (Julien 2005)'. High probability of large scale soil movement with major off-site implications.	<b>H</b>	<b>MH</b>
8. Reduce biomass?	As a very low growing prostrate herb its ability to completely displace ground layer vegetation (Leigh & Walton 2004), as well as affect the regeneration of woody species, such as the eucalypts, <i>E. coolabah</i> & <i>E. cameldulensis</i> , and the large shrub <i>Muehlenbeckia cunninghamii</i> (Earl 2003), it could significantly decrease biomass of a community.	<b>H</b>	<b>MH</b>
9. Change fire regime?	'Reduced fire risk' is described as one of the possible economic benefits of lippia, and, the NSW state forestry service does not consider it a problem plant because in forestry areas it reduces fire hazards due to the low fuel loads (Leigh & Walton 2004). Its ability to reduce fuel loads is likely to cause a decrease in the intensity of fire, and 'reduced fire risk' indicates that it may also reduce fire frequency.	<b>M</b>	<b>MH</b>
<b>Community Habitat</b>			
10. Impact on composition (a) high value EVC	EVC= Red Gum Wetland (E); CMA= Goulburn Broken; Bioreg= Murray Fans; VH CLIMATE potential. There are many communities threatened by the presence of lippia (Earl 2003). It is able to completely dominate	<b>H</b>	<b>MH</b>

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	ground layer vegetation (Leigh & Walton 2004) forming monocultures, and is considered a major threat to riparian and associated ecosystems (Julien et al 2004).		
(b) medium value EVC	EVC= Lakebed herbland (D); CMA= Mallee; Bioreg= Murray Mallee; VH CLIMATE potential. It is able to completely dominate ground layer vegetation (Leigh & Walton 2004) forming monocultures, and is considered a major threat to riparian and associated ecosystems (Julien et al 2004).	H	MH
(c) low value EVC	EVC= Shrubby Riverine Woodland (V); CMA= Mallee; Bioreg= Murray Mallee; VH CLIMATE potential. It is able to completely dominate ground layer vegetation (Leigh & Walton 2004) forming monocultures, and is considered a major threat to riparian and associated ecosystems (Julien et al 2004).	H	MH
11. Impact on structure?	It is able to completely dominate ground layer vegetation (Leigh & Walton 2004) forming monocultures, and is considered a major threat to riparian and associated ecosystems (Julien et al 2004). Major effect on <60% of floral strata.	MH	MH
12. Effect on threatened flora?	Earl (2003) lists 14 threatened flora species listed under the EPBC Act, including <i>Echinocloa inundata</i> within the Macquarie Marshes, that are known to occur in the distribution of lippia, and that may be adversely impacted. She also states that 'any species that occurs in wetlands, along riparian zones or on floodplains which are affected by lippia could be regarded as potentially threatened because of the extent of the modification of the habitat...'. However, lippias direct impact on these species has not been officially assessed (Leigh & Walton 2004).	MH	M
<b>Fauna</b>			
13. Effect on threatened fauna?	'...the loss of wildlife habitat has been observed in the Macquarie marshes, including the reduced availability of waterbird nesting sites as a result of the conversion of water couch communities to lippia (Leigh & Walton 2004)'. Reduced habitat would likely impact on threatened fauna species, however no specific reference was found.	MH	ML
14. Effect on non-threatened fauna?	'...the loss of wildlife habitat has been observed in the Macquarie marshes, including the reduced availability of waterbird nesting sites as a result of the conversion of water couch communities to lippia (Leigh & Walton 2004)'. This reduced habitat suitability would likely lead to a population reduction of waterbirds in the area.	MH	MH
15. Benefits fauna?	No benefits to indigenous fauna were found documented, and as a prostrate herb described as having limited palatability (Julien 2005) it is likely to provide very little support to desirable species.	H	MH
16. Injurious to fauna?	No information was found documented to indicate that this species is injurious to fauna.	L	M
<b>Pest Animal</b>			
17. Food source to pests?	Honey bees extract large quantities of nectar from the flowers (Leigh & Walton 2004). Supplies food for minor pest species	ML	MH
18. Provides harbour?	No description of it providing harbour to pest animals was found, and it is unlikely to have the capacity to provide any harbour due to its habit as a low growing prostrate herb (Leigh & Walton 2004).	L	MH

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<b>Agriculture</b>			
19. Impact yield?	'Lippia replaces productive pasture species and reduces grazing productivity, in some cases necessitating total destocking (Julien et al 2004)'. In a Murray Darling Basin survey, average destocking rate was 55%, and up to 100% in severely infested paddocks (Julien et al 2004)'. Major reduction in available grazing land, serious impact on yield (>20% reduction).	<b>H</b>	<b>MH</b>
20. Impact quality?	Induced copper deficiency can develop in sheep that graze on lippia which may lead to the formation of 'metallic wool', which is described as a potential 'economic cost of lippia (Leigh & Walton 2004)'. However, the degree to which wool quality may be affected is unclear.	<b>M</b>	<b>M</b>
21. Affect land value?	'The presence of lippia on a farm reduces the farm's value because of the reduced productivity and cost of largely ineffectual controls (Julien et al 2004)'. 'Lippia has been estimated to cost the Moree Shire \$12A million in reduced land values (BRCMLC 2002 in Leigh & Walton 2004). Well documented, significant reductions (>10%) possible.	<b>H</b>	<b>M</b>
22. Change land use?	'One such paddock, remembered as good pasture in the early 1970s, is now completely overgrown with lippia and has been abandoned as a grazing pasture (Leigh & Walton 2004)'. Total destocking from pasture is sometimes necessary as control is not achieved by conventional management practises. However, it is managed by cultivation, and inundated floodplains that should be maintained as permanent pastures are being cultivated (Julien et al 2004). Causes downgrading of the priority land use.	<b>MH</b>	<b>MH</b>
23. Increase harvest costs?	'There are additional significant costs related to herbicidal control, clearing and infrastructure damage (Julien et al 2004)'. Major increase in production costs.	<b>H</b>	<b>MH</b>
24. Disease host/vector?	Not found described as a host of pests or diseases of agriculture.	<b>L</b>	<b>M</b>