Impact Assessment Record

Scientific name*: Conyza sumatrensis* (Retz.) E.Walker (formerly *C. albida* and *C.floribunda*) Common name: Tall Fleabane, Fleabane

QUESTION	COMMENTS	RATING	CONFIDENCE
Social			
1. Restrict human access?	Plant architecture is one erect stem with an apical panicle of capitula (flowering head) (Thebauud *et al*, 1996) that can produce dense stands (Economou *et al*, 2002) up to two metres high (Walsh and Entwisle, 1996). Sited images of infestations indicate that accessibility is likely to be inhibited presenting a moderately low nuisance value.	**ML**	**MH**
2. Reduce tourism?	*C.albida* (synonym *C.sumatrensis*) has been reported in athletic fields including soccer pitches and golf courses as well as in urban parks, historical sites and monuments, cemeteries and private gardens (Economou and Nektarios, 2003). Populations of this weed are likely to affect aesthetics and activity in recreational areas such as golf and soccer.	**ML**	**MH**
3. Injurious to people?	Not known to be injurious to people, no prickles, spines (Walsh and Entwisle, 1996) or toxins (ref) present in this plant.	**L**	**MH**
4. Damage to cultural sites?	In England the species has been found in cracks of concrete, gravel car parks and building sites (Case and Crawley, 2000). This indicates that the plant can establish within and around infrastructure potentially having both a moderate visual and unlikely to have a structural effect.	**ML**	**MH**
Abiotic			
5. Impact flow?	Essentially a terrestrial species that occurs in relatively disturbed area. However the plant has been described as establishing in disturbed wetlands (Hussey *et al*, 1997) but has been mostly referred to in the literature as having most impact terrestrially. However it may have a minor impact on surface or substrate flow.	**ML**	**ML**
6. Impact water quality?	Given that the species has the capacity to establish in disturbed wetland (Hussey *et al*, 1997) it may subsequently have a noticaeable but minor effects in light levels through increased foliage subsequently effecting waterbody function and water quality.	**ML**	**L**
7. Increase soil erosion?	The species usually invades already bare and disturbed areas where competition is low between the invader and established vegetation (Case and Crawley, 2000). It easily invades and grows under the canopy of the summer annual communities, succeeded by perennial grassland species (Ohtsuka, 1998).). Its invasive nature could suppress the native flora in the more open habitats it favours (Bevan, 1992). Dense stands can smother native vegetation, particularly in grassy remnant vegetation of farming areas (ESC, 2004). However it is a poor competitor and undergoes significant decrease with increasing competition (Case and Crawley, 2000). It has a huge root system that can cause soil erosion (Addison, 2007). In open habitats it may improve soil stability however its invasive nature could suppress other species however the species presents a moderate probability of large scale soil movement.	**ML**	**M**
8. Reduce biomass?	The existence of *C.albida* (syn *C.sumatrensis*) exhibits direct and indirect effects on the structure of plant communities (Economou and Nektarios, 2003). Its invasive nature could suppress the native flora in more open habitats it colonises (Bevan, 1992). Dense stands can smother native vegetation, particularly in grassy remnant vegetation of farming areas (ESC, 2004). The species can easily invade and grow under the canopy of the	**ML**	**M**

Impact Assessment Record

Scientific name*: Conyza sumatrensis* (Retz.) E.Walker (formerly *C. albida* and *C.floribunda*) Common name: Tall Fleabane, Fleabane

QUESTION	COMMENTS	RATING	CONFIDENCE
	summer annuals, succeeded by perennial grassland species (Ohtsuka, 1998). This suggests that the plant is a displacing species and direct replacement of biomass by the invading species may occur.		
9. Change fire regime?	On the basis that the plant does not significantly alter the biomass of a community it can be concluded it has a small or negligible effect on fire risk. Unk	**M**	**L**
Community Habitat			
10. Impact on composition (a) high value EVC	EVC= Creekline Grassy Woodland (E); CMA= Corangamite; Bioregion= VictorianVolcanic Plain; VH CLIMATE potential. Dense stands can smother native vegetation, particularly in grassy remnant vegetation of farming areas (ESC, 2004). *C.sumatrensis* can easily invade and grow under the canopy of the summer annuals, succeeded by perennial grassland species (Ohtsuka, 1998). The plant can grow up to two metres in height (Walsh and Entwisle, 1996) coupled with its invasive potential the species has the ability to cause significant displacement within the lower stratum.	**MH**	**MH**
(b) medium value EVC	EVC= Grassy Dry Forests (D); CMA= Goulburn Broken; Bioregion= Victorian Riverina; VH CLIMATE potential. Dense stands can smother native vegetation, particularly in grassy remnant vegetation of farming areas (ESC, 2004). *C.sumatrensis* can easily invade and grow under the canopy of the summer annuals, succeeded by perennial grassland species (Ohtsuka, 1998). The plant can grow up to two metres in height (Walsh and Entwisle, 1996) coupled with its invasive potential the species has the ability to cause significant displacement within the lower stratum.	**MH**	**MH**
(c) low value EVC	EVC= Heathy Dry Forests (LC); CMA= East Gippsland; Bioregion= Heathy Dry Forest; VH CLIMATE potential. Dense stands can smother native vegetation, particularly in grassy remnant vegetation of farming areas (ESC, 2004). *C.sumatrensis* can easily invade and grow under the canopy of the summer annuals, succeeded by perennial grassland species (Ohtsuka, 1998). The plant can grow up to two metres in height (Walsh and Entwisle, 1996) coupled with its invasive potential the species has the ability to cause significant displacement within the lower stratum.	**MH**	**MH**
11. Impact on structure?	The existence of *C.albida* (syn *C.sumatrensis*) exhibits direct and indirect effects on the structure of plant communities (Economou and Nektarios, 2003). It can easily invade, colonise and grow under the canopy of the summer annuals communities, succeeded by perennial grassland species (Ohtsuka, 1998). Dense stands can smother native vegetation, particularly in grassy remanent vegetation of farming areas (ESC). Its invasive nature could suppress the native flora in more open habitats it colonises (Bevan, 1992). The plant can grow up to two metres in height (Walsh and Entwisle, 1996) therefore it can have a major impact on species diversity and abundance in both the lower and mid stratum.	**MH**	**MH**

Impact Assessment Record

Scientific name*: Conyza sumatrensis* (Retz.) E.Walker (formerly *C. albida* and *C.floribunda*) Common name: Tall Fleabane, Fleabane

QUESTION	COMMENTS	RATING	CONFIDENCE
12. Effect on threatened flora?	The effect on threatened flora is unknown	**MH**	**L**
Fauna			
13. Effect on threatened fauna?	The effect on threatened fauna is unknown	**MH**	**L**
14. Effect on non-threatened fauna?	The flowers have been reported to be eaten by the Crimson Rosella Platycerus elegans (RBGSYD) and are palatable to livestock (ESC). Furthermore deer were noted to graze on *C.sumatrensis* at the beginning of the flowering period during Case and Crawley (2000) trial. Although the plant can change plant community structure (Economou and Nektarios, 2003) it does provide an additional food source for some non indigenous fauna. It is likely to have minor effects on fauna species.	**ML**	**M**
15. Benefits fauna?	*C.sumatrensis* is palatable to native browsers such as wallabies (ESC, 2004). This suggests that it provides some assistance as an additional food source. However little other information exists on the benefits to native flora.	**MH**	**M**
16. Injurious to fauna?	After consulting the literature (Case and Crawley, 2000; Economou and Nektarios, 2003; Walsh and Entwisle, 1996) there was no reports of the plant begin toxic or injurious to indigenous fauna.	**L**	**MH**
Pest Animal			
17. Food source to pests?	Deer were noted to graze on *C.sumatrensis* at the beginning of the flowering period during Case and Crawley (2000) trial. Although deer is not a pest this finding supports the assumption that other pest species such as goats may also find it palatable. Evidence also exists that the Crimson Rosella eats the flowers (RBGSYD) again suggesting that pest bird species may also use it as a food source.	**ML**	**H**
18. Provides harbor?	The species can grow to heights of two metres (Walsh and Entwisle, 1996). Sited images suggest that dense stands have the capacity to harbour rabbits or foxes temporarily at low densities.	**MH**	**M**
Agriculture			
19. Impact yield?	Closely relate *C. bonariensis* (Flaxleaf fleabane) and *C. canadensis* (Canadian fleabane) (Thebaud and Abbott, 1995) are major weeds in dryland minimum tillage production systems (Wu *et al*, 2007). They are quick to colonise bare non –cropped areas including bare fallow or in poorly competitive crops (Walker *et al*, 2004; Moore, 2004). Colonisation appears best in wide-row chickpea, skip row (wide row) sorghum and in areas of poor crop establishment irrespective of the time of year and crop type (Ward and Hamilton. 2004). More specifically *C.sumatrensis* is a persistent weed problem in vineyards and orchards in Europe where it is the main plant species in lemon orchards in Portugal (Vasconcelos *et al*, 2006; Economou *et al,* 2002). It has also been recognised as an emerging weed species in minimum tillage systems in Australia (Wu and Walker, 2004)(check) however it is not yet as common or prevalent in these systems as its two closely related species mentioned above. Subsequently little information exists on the species impact on quantity or yield of agricultural produce. However it would be	**M**	**L**

Impact Assessment Record

Scientific name*: Conyza sumatrensis* (Retz.) E.Walker (formerly *C. albida* and *C.floribunda*) Common name: Tall Fleabane, Fleabane

QUESTION	COMMENTS	RATING	CONFIDENCE
	correct to say based on the prevalence of *Conyza* species in agricultural systems that it is likely that *C.sumatrensis* has the capacity to become a serious weed of agricultural systems.		
20. Impact quality?	Closely relate *C. bonariensis* (Flaxleaf fleabane) and *C. canadensis* (Canadian fleabane) (Thebaud and Abbott, 1995) are major weeds in dryland minimum tillage production systems (Wu *et al*, 2007). They are quick to colonise bare non –cropped areas including bare fallow or in poorly competitive crops (Walker *et al*, 2004; Moore, 2004). Colonisation appears best in wide-row chickpea, skip row (wide row) sorghum and in areas of poor crop establishment irrespective of the time of year and crop type (Ward and Hamilton. 2004). More specifically *C.sumatrensis* is a persistent weed problem in vineyards and orchards in Europe where it is the main plant species in lemon orchards in Portugal (Vasconcelos *et al*, 2006; (Economou *et al,* 2002). It has also been recognised as an emerging weed species in minimum tillage systems in Australia (Wu and Walker, 2004) however it is not yet as common or prevalent in these systems as its two closely related species mentioned above but with *C. bonariensis* it is the main species in the cropping areas of northern NSW and Southern Queensland (Storrie, 2007). A paucity of information exists on the species impact on quality of agricultural produce. However that it is likely that *C.sumatrensis* has the capacity to become a serious weed of agricultural systems like *C. bonariensis* and *C.canadensis.*	**M**	**L**
21. Affect land value?	A known weed of agricultural systems (Walker, 2004). However there is no information in the literature that indicates how this species may change land use.	**M**	**L**
22. Change land use?	Closely related *C.bonariensis* (Thebaud and Abbott, 1995) is the most common and persistent fleabane in agricultural systems particularly in the northern cropping region (Rollin and Tan, 2004). For effective management of Fleabane (*C.bonariensis*) farmers have resorted to growing more competitive crops, such as winter cereals, in heavily infested area. (Walker *et al*, 2004). Furthermore in an effort to manage the weed zero-till growers are now cultivating (Loveday, 2004). However little information exists on the impact *C.sumatrensis* has had on land value.	**M**	**L**
23. Increase harvest costs?	Closely relate *C. bonariensis* (Flaxleaf fleabane) and *C. canadensis* (Canadian fleabane) (Thebaud and Abbott, 1995) are major weeds in dryland minimum tillage production systems (Wu et al, 2007). The cost of Fleabane has been loss in production and increase in herbicide costs both contributing to less profit to the producer (Milne, 2004). The prevalence of Fleabane in fallows has meant a doubling in weed control costs in the last 10 years (Walker, 2004). It has also required a change from zero-til to cultivation (Loveday, 2004) and a change in farming configurations and rotations to maximise competition against fleabane (Walker et al, 2004). More specifically *C.sumatrensis* has been recognised as being problematic during the cultivation period (van Keer and Turkelboom). Unlike the above two *Conyza* species *C.sumatrensis* has not yet developed resistance to a number of herbicides (Storrie, 2007). Resistance in *C.sumatrensis* is still limited to paraquat (Storrie, 2007). *C.sumatrensis* is not as common in agricultural systems as *C. bonariensis* and *C.canadensis* however is likely to establish as a persistent problem in these systems based on the behaviour of other *Conyza* species and subsequently have an impact on harvest costs.	**M**	**L**

Impact Assessment Record

Scientific name*: Conyza sumatrensis* (Retz.) E.Walker (formerly *C. albida* and *C.floribunda*) Common name: Tall Fleabane, Fleabane

QUESTION	COMMENTS	RATING	CONFIDENCE
24. Disease host/vector?	*C.albida* Willd ex Spreng (syn *C. sumatrensis*) tested positive for the Pepino mosaic virus in Spain (Cordoba *et al*, 2004). Host of turnip mosaic virus in Zimbabwe (Chivasa *et a*l, 2002). *C.sumatrensis* was found to be infected by the yellow leaf curl virus in Spain (Jorda *et a*l, 2001). *C.sumatrensis* is host to several common viruses.	**M**	**H**