Impact Assessment Record

Scientific Name: *Opuntia aurantiaca* (Lindl.) Common name: tiger pear

QUESTION	COMMENTS	RATING	CONFIDENCE
Social			
1. Restrict human access?	"Dense tiger pear forms an impenetrable spiny ground-cover" (NRM, 2005) "often difficult to see in long grass" (Auld & Medd, 1992) and up to 1.5m high (Henderson, 2001), with spines up to 4cm long (Hosking, McFadyn & Murray, 1988) which, on a shrub this size, would prohibit access by humans.	**H**	**MH**
2. Reduce tourism?	Large infestations of this weed, "common along watercourses" (Hosking, McFadyn & Murray, 1988) would prevent access (see Q. 1) and recreational uses of rivers.	**H**	**H**
3. Injurious to people?	"Armed with needle-sharp, barbed spines, about 1-3cm long" (Zimmerman, 1978). "In addition to the obvious objectionable nature of the large sharp spines…barbed bristles…readily penetrate human skin causing severe irritation and are difficult to remove" (Parsons & Cuthbertson, 2001). "I trod on a piece with my boot, and the spines readily entered the hard sole leather" (Farlow pers. comm. in Maiden, 1911).	**H**	**H**
4. Damage to cultural sites?	Thickets would have a negative visual impact on cultural sites. See picture in Parsons & Cuthbertson, 2001.	**ML**	**MH**
Abiotic			
5. Impact flow?	"Common along watercourses" (Hosking, McFadyen & Murray, 1988) but grows along riverbanks (Moran & Annecke, 1979). Terrestrial species.	**L**	**H**
6. Impact water quality?	Terrestrial species (see Q. 6).	**L**	**H**
7. Increase soil erosion?	Prickly pear in general was listed as "preventer of land erosion, and as a soil arrester on barren spots" in Maiden (1911). It is a very long-lived plant (Parsons & Cuthbertson, 1992) that could bind soil with its roots and reduce the impact of rain with its foliage.	**L**	**H**
8. Reduce biomass?	"Patches…grow densely" (Parsons & Cuthbertson, 2001) and, being a fleshy succulent, would tend to increase or maintain biomass in pasture and grassland (where it is noted to invade in Carr et al, 1992 and Hosking & Deighton, 1981).	**L**	**MH**
9. Change fire regime?	"Because of their high moisture content, plants are not easily burnt" (Parsons & Cuthbertson, 1992) so that in South Africa, "plants were collected, piled on firewood and later burned" (Moran & Annecke, 1979), supporting that notion that tiger pear do not burn without an associated fuel load. Likely to greatly decrease fire frequency in thick infestations and intensity in more sparse infestations.	**H**	**MH**
Community Habitat			
10. Impact on composition (a) high value EVC	EVC=Damp Sands Herb Rich Woodland (V), CMA=Glenelg-Hopkins, Bioreg.=Victorian Volcanic Plain, CLIMATE=VH. Photographs in Tanner (2004a & 2004b) show dense infestations that have had a major impact on the ground layer flora. Major displacement of ground layer flora.	**MH**	**MH**
(b) medium value EVC	EVC=Woorinen Sands Mallee (D), CMA=Mallee, Bioreg.=Murray Mallee, CLIMATE=VH. Photographs in Tanner (2004a & 2004b) show dense infestations that have had a major impact on the ground layer flora. Major displacement of ground layer flora.	**MH**	**MH**
(c) low value EVC	EVC=Heathy Woodland (LC), CMA=Glenelg-Hopkins, Bioreg.=Dundas Tablelands, CLIMATE=VH. Photographs in Tanner (2004a & 2004b) show dense infestations that have had a major impact on the	**MH**	**MH**

QUESTION	COMMENTS	RATING	CONFIDENCE
	ground layer flora. Major displacement of ground layer flora.		
11. Impact on structure?	"Plants growing in high rainfall bushveld areas, where there are other plants to lean on, reach a height of 2m" (Zimmerman, 1978). "This species is often difficult to see in long grass" (Auld & Medd, 1992). It's potential height suggests that tiger cactus could impact on the ground layer and the shrub layer of vegetation communities. Photographs in Tanner (2004a & 2004b) show dense infestations that have had a major impact on the ground layer flora. As they climb into higher vegetation, tiger pear is likely to be less dense and thus have a more minor effect.	**MH**	**MH**
12. Effect on threatened flora?	No information available	**MH**	**L**
Fauna			
13. Effect on threatened fauna?	No information available	**MH**	**L**
14. Effect on non-threatened fauna?	"Heavy infestations limit the grazing potential of [land]" as prickly pear is "armed with needle-sharp, barbed spines, about 1-3cm long" (Zimmerman, 1978). This would prohibit access to food sources and probably to shelter also for native fauna.	**H**	**H**
15. Benefits fauna?	"A native insect has been recorded feeding on flowers and young joints" (Hosking, McFadyn & Murray, 1988), however because of its ability to form spiny impenetrable infestations (see Q. 14), this plant would not normally benefit fauna as a food source. As it can harbour rabbits (Parsons & Cuthbertson, 2001) it may be able to provide shelter to small native mammals too.	**MH**	**MH**
16. Injurious to fauna?	"*Opuntia* species are not usually grazed by stock because the stout spines and bristles damage their tongues and lips, but, in times of drought, plants are eaten" (Parsons & Cuthbertson, 2001). "Animals…may become lame as well as full of sores and abscesses as a result of the adherence of barbed spines to different parts of their bodies" (Zimmerman, 1978). Large spines have proven dangerous to fauna.	**H**	**H**
Pest Animal			
17. Food source to pests?	"*O. stricta* seed…is spread in the droppings of birds, foxes and other animals" (Parsons & Cuthbertson, 2001) and whilst *O. aurantiaca* lacks viable seed, it does produce fruit (Zimmerman, 1978) that are edible (so presumably attractive to other animals) and also hosts to fruit fly (Parsons & Cuthbertson, 2001). Food source to at least one serious pest animal at a crucial time of year.	**H**	**MH**
18. Provides harbor?	"Effective harbour for pest animals such as rabbits" (Parsons & Cuthbertson, 2001).	**H**	**MH**
Agriculture			
19. Impact yield?	"High densities of the weed reduce the productivity of pastoral land" (Moran & Zimmerman, 1991). "Heavy infestations limit the grazing potential of veld…in the supply of nutritive plants" (Zimmerman, 1978). In South Africa, "grazing by livestock on many properties was severely inhibited" (Moran & Zimmerman, 1991). In USA, prickly pear in general has been estimated to have "decreased the carrying	**H**	**H**

QUESTION	COMMENTS	RATING	CONFIDENCE
	capacity of [land] one-fourth to one-third" (Maiden, 1911).		
20. Impact quality?	"Small segments…attach to wool and hides of animals" (Parsons & Cuthbertson, 2001). "The numerous long barbed spines…are injurious to livestock" (Moran & Zimmerman, 1991). "Grazing animals, especially lambs, may become lame as well as full of sores as and abscesses as a result of the adherence of barbed spines to different parts of their bodies…wool is down-graded if it is tangled with spiny leaf-pads" (Zimmerman, 1978). Meat may be downgraded if spines penetrate the muscle.	**MH**	**H**
21. Affect land value?	"Infestations…seriously inhibit pastoral activities and result in a marked devaluation in the price of infested land" (Zimmerman, 1978). In USA, depreciation due to general prickly pear infestations have been estimated at 50% (Maiden, 1911). "Tiger pear is only a problem of grazing land, as it is easily destroyed by ploughing…Unfortunately, most infested grazing land is unsuitable for cultivation" (Hosking & Deighton, 1981).	**H**	**H**
22. Change land use?	"The effectiveness of all control measures…is limited because of the difficulty of treating lose leaf-pads and small plants…Dense infestations of jointed cactus have the potential of making farming uneconomic or even impossible" (Zimmerman, 1978). "Can cover pasture land rendering it useless for grazing" (Hosking & Deighton, 1979). Tiger pear "is easily destroyed by ploughing [but] unfortunately, much infeted grazing land is unsuitable for cultivation" (Hosking & Deighton, 1981). Difficulty and thus expense of control, combined with yeild and quality impacts may cause farmland to be abandoned.	**H**	**H**
23. Increase harvest costs?	"Costly chemical control programme (Moran & Zimmerman, 1991). "[Chemical] control is made more difficult on the steep terrain where it is frequently necessary" (Auld et al, 1982/83). "South Africa's most expensive weed" (Zimmerman, 1978).	**H**	**H**
24. Disease host/vector?	"Hosts of fruit fly" (Parsons & Cuthbertson, 2001).	**H**	**MH**

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Revisions

Date	Revised by	Revision