Impact Assessment Record

Scientific Name: *Gazania linearis* (L.) Gaertn. Common name: Gazania

QUESTION	COMMENTS	RATING	CONFIDENCE
Social			
1. Restrict human access?	As a groundcover to 30cm tall (Faithfull, 2006), unlikely to restrict human access at all.	**L**	**MH**
2. Reduce tourism?	As a groundcover to 30cm tall (Faithfull, 2006), unlikely to be noticed by the average visitor.	**L**	**MH**
3. Injurious to people?	Gazania species in general noted as a harbour for White Italian Snail, that can harbour a parasite that is harmful to human health (Enviroweeds, 2002). If the snails are eaten, humans can become infected with a flatworm that causes gastroenteritis, but the parasite cannot be contracted unless the snails are eaten (Horstman, 2002). No further injury to people has been found documented and this disease is not directly related to Gazanias.	**L**	**MH**
4. Damage to cultural sites?	As a clump-forming groundcover to 30cm tall (Faithfull, 2006), unlikely to cause structural or visual damage.	**L**	**MH**
Abiotic			
5. Impact flow?	Invades streambanks (Webb et al, 1988), but is only recorded as growing in terrestrial environments (Faithfull, 2006). Unlikely to impact flow.	**L**	**MH**
6. Impact water quality?	Invades streambanks (Webb et al, 1988), but is described as perennial (Batten & Bokelmann, 1966), rhizomatous (Webb et al, 1988) and as growing in terrestrial environments (Faithfull, 2006). Likely to bind soil near streambanks, reducing erosion, and consequently turbidity.	**L**	**MH**
7. Increase soil erosion?	Described as perennial (Batten & Bokelmann, 1966), rhizomatous (Webb et al, 1988) and as growing in sandy soils (Faithfull, 2006). Likely to bind soil, reducing erosion.	**L**	**MH**
8. Reduce biomass?	Prevents any regeneration of coastal native species (Pittwater Council, 2007). This article implies that *G. linearis* even suppresses the regeneration of tree species, such as coastal wattle. Major reduction in biomass, even replacing permanent woody vegetation.	**H**	**M**
9. Change fire regime?	Fire resistant (Batten & Bokelmann, 1966) and able to naturalise in grasslands (Faithfull, 2006) and prevent regeneration of native species (Pittwater Council, 2007). Likely to reduce the incidence and intensity of fire.	**H**	**M**
Community Habitat			
10. Impact on composition (a) high value EVC	EVC= Ridged Plains Mallee (E); CMA=Mallee; Bioreg= Murray Mallee; CLIMATE potential=VH. Only grow to about 30cm (Faithfull, 2006), however, it prevents any regeneration of coastal native species (Pittwater Council, 2007). This article implies that *G. linearis* even suppresses the regeneration of tree species, such as coastal wattle. Patches of *Gazania* are "usually devoid of other species" (Cordingley & Petherick, 2005). Major displacement of some dominant species. Able to form monocultures, but only in discreet patches.	**MH**	**M**

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QUESTION	COMMENTS	RATING	CONFIDENCE
(b) medium value EVC	EVC= Woorinen Sands Mallee (D); CMA=Mallee; Bioreg= Murray Mallee; CLIMATE potential=VH. Only grow to about 30cm (Faithfull, 2006), however, it prevents any regeneration of coastal native species (Pittwater Council, 2007). This article implies that *G. linearis* even suppresses the regeneration of tree species, such as coastal wattle. Patches of *Gazania* are "usually devoid of other species" (Cordingley & Petherick, 2005).	**MH**	**M**
(c) low value EVC	EVC= Loamy Sands Mallee (LC); CMA=Mallee; Bioreg= Murray Mallee; CLIMATE potential=VH. Only grow to about 30cm (Faithfull, 2006), however, it prevents any regeneration of coastal native species (Pittwater Council, 2007). This article implies that *G. linearis* even suppresses the regeneration of tree species, such as coastal wattle. Patches of *Gazania* are "usually devoid of other species" (Cordingley & Petherick, 2005).	**MH**	**M**
11. Impact on structure?	Grow to about 30cm (Faithfull, 2006). "Naturalised and known to be a minor problem [in natural ecosystems] warranting control at 4 or more locations" within Australia (Groves et al, 2003). Gazania species in general displace native vegetation and directly threaten a nationally threatened daisy on Eyre Peninsula" (DeLaine & Stokes, 2006). Has naturalised in an area of native grassland that was once in good condition, now no longer considered significant due to the *Gazania* infestation (Faithfull, 2006). Prevents any regeneration of coastal native species (Pittwater Council, 2007). This article implies that *G. linearis* even suppresses the regeneration of tree species, such as coastal wattle. Patches of *Gazania* are "usually devoid of other species" (Cordingley & Petherick, 2005). Major effect on all layers	**H**	**M**
12. Effect on threatened flora?	Despite evidence that Gazania species in general threaten a nationally threatened daisy on the Eyre Peninsula (DeLaine & Stokes, 2006), no evidence was found that *G. linearis* affects threatened flora in Victoria. However, this species appears to have a major effect on coastal native species (Pittwater Council, 2007) and is extremely competitive with ground flora in the Murray Darling basin (J. Virtue, 2007, pers. Comm., 23rd March).	**MH**	**L**
Fauna			
13. Effect on threatened fauna?	No evidence was found that *G. linearis* affects threatened fauna in Victoria. However, this species appears to have a major effect on coastal native species (Pittwater Council, 2007) and is extremely competitive with ground flora in the Murray Darling basin (J. Virtue, 2007, pers. Comm., 23rd March.), which may have flow on effects for threatened fauna.	**MH**	**L**
14. Effect on non-threatened fauna?	This species is capable of displacing native vegetation (DeLaine & Stokes, 2006) and degrading grassland (Faithfull, 2006). It may reduce the availability of food for some fauna species.	**ML**	**M**
15. Benefits fauna?	No evidence that this species benefits indigenous fauna. *G. rigens* is eaten (heavily damaged) by rabbits (Metzger & Weisberg, 2001), however, no evidence was found about the palatability or toxicity of the plant.	**M**	**L**
16. Injurious to fauna?	Taxonomic descriptions of *G. linearis* do not indicate that it has either spines or burrs (Webb et al, 1988). No evidence suggests that this species injures indigenous fauna. No evidence found about the palatability or toxicity of the plant, though.	**M**	**L**

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QUESTION	COMMENTS	RATING	CONFIDENCE
Pest Animal			
17. Food source to pests?	*G. rigens* is eaten (heavily damaged) by rabbits (Metzger & Weisberg, 2001), however, no evidence was found about the palatability of this plant.	**M**	**L**
18. Provides harbour?	Clump-forming species growing to 30cm high (Faithfull, 2006). Not recorded as harbouring pest species, but it may be capable of harbouring minor pest species such as rodents.	**ML**	**M**
Agriculture			
19. Impact yield?	"Naturalised and known to be a minor problem [in agricultural ecosystems] warranting control at 4 or more locations" within Victoria (Groves et al, 2003). Naturalised populations in the Southern wheatbelt of WA appear to be on roadsides and wasteland around settlements, rather than on agricultural land (Hussey et al, 1997). Not considered an agricultural weed in South Australia (D. Cooke, 2007, pers comm., 23rd March), but form carpets in citrus orchards, competing with trees for nutrients and water (J. Virtue, 2007, pers. Comm., 23rd March). Considered an *environmental* weed in Victoria (Enviroweeds, 2002), but no further information about its seriousness as an agricultural weed was found. Likely to have a minor impact on yield.	**ML**	**M**
20. Impact quality?	A low-growing plant that appears to only affect horticultural crops (see Q.19). Unlikely to impact quality.	**L**	**M**
21. Affect land value?	A low-growing plant that appears to only affect horticultural crops (see Q.19). Unlikely to impact land value.	**L**	**M**
22. Change land use?	A low-growing plant that appears to only affect horticultural crops (see Q.19). Unlikely to change land use.	**L**	**M**
23. Increase harvest costs?	High rates of herbicide, with an effective penetrant are required to control gazania in horticultural crops (J. Virtue, 2007, pers. Comm., 23rd March). May increase harvest costs slightly, but as this is still a normal control method, unlikely to be a major cost increase.	**M**	**M**
24. Disease host/vector?	Gazania species in general noted as a harbour for White Italian Snail, a crop and pasture contaminant (Enviroweeds, 2002). White Italian Snail is "probably the most well-known pest of Australian agricultural crops" that can destroy crops and contaminate grain (Rudman, 2003). It is also a host for parasitic nematodes of sheep and cattle (Garrison, 1993). A widespread pest that has major consequences, but is unlikely to increase the incidence of the pest, given that it is so common anyway.	**M**	**M**