

Impact Assessment Record

Scientific name: *Pennisetum setaceum* (Forssk.) Chiov

Common name: fountain grass, tender fountain grass

QUESTION	COMMENTS	RATING	CONFIDENCE
Social			
1. Restrict human access?	Robust tussock forming perennial about 1 m high with creeping underground stems with inflorescences 30cm long (Richardson et al, 2006). Densely tufted perennial grass growing to 1.5m (Groves <i>et al</i> , 2005, Johnson) that can form dense monoculture stands that can exclude all other plants (Johnson; Poulin <i>et al</i> , 2005). Once the plant forms dense infestations it is likely to be of high nuisance value impeding both pedestrian and vehicular access.	MH	MH
2. Reduce tourism?	Flower heads are 8-30 cm long (Walsh and Enwisle, 1996) and are a long feathery spike which makes it attractive for garden cultivations (Groves <i>et al</i> , 2005). In a dry environment it remains attractive and in humidity it flowers constantly and bears fruits throughout the whole year (Medio ambiente Canarias, 1999). It makes a dramatic statement anywhere in the landscape (Floridata). Furthermore it is a densely tufted perennial grass growing to 1.5m (Groves <i>et al</i> , 2005, Johnson) that can form dense stands that can exclude all other plants (Johnson). Its attractive flowerhead is obvious and is likely to have major impacts on aesthetics however visitors may judge the display as aesthetically pleasing. Its ability to dominate and densely invade landscapes indicates that the plant is likely to have significant impact on recreation activities if invading such areas.	MH	ML
3. Injurious to people?	No reports of the plant being injurious to people (Walsh and Enwisle, 1996, Richardson <i>et al</i> , 2006).	L	MH
4. Damage to cultural sites?	Flowerheads are 8-30 cm long (Walsh and Enwisle, 1996) and are a long feathery spike which makes it attractive for garden cultivations (Groves <i>et al</i> , 2005). In a dry environment it remains attractive and in humidity it flowers constantly and bears fruits throughout the whole year (Medio ambiente Canarias, 1999). It makes a dramatic statement anywhere in the landscape (Floridata). On this basis infestation of this plant on cultural sites it is likely to have a moderate visual effect.	ML	MH
Abiotic			
5. Impact flow?	This species is terrestrial it is unlikely to have an affect on water flow	L	MH
6. Impact water quality?	This species is terrestrial it is unlikely to have an affect on water quality	L	MH
7. Increase soil erosion?	The species is rhizomatous, forming large tussocks (Walsh and Enwisle, 1996) however it is shallow rooted (Litton <i>et al</i> , 2006). The plant has been noted as being good for erosion control (Floridata) and has been used for soil stabilisation (Johnson). However the plant is an aggressive species that can displace native species forming dense stands (Johnson) but maintains soil integrity by replacing existing species.	L	M
8. Reduce biomass?	In a study conducted by Litton <i>et al</i> , (2006) the site used was formerly a forested site that has been converted to <i>P. setaceum</i> dominated grassland. The presence of a dense <i>P.setaceum</i> understory will lead to the eventual conversion of remaining forest fragments to grasslands without active control of <i>P.setaceum</i> (Litton <i>et al</i> , 2006). Formerly extensive <i>Heteropogon</i> grasslands have been reduced to remnants surrounded by <i>Pennisetum</i> (Carino	H	MH

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	and Daehler, 2002). The species can destroy dry forests through increased fire frequency (Poulin <i>et al</i> , 2005). In addition Therefore this species has the capacity to significantly decrease the biomass of areas by replacing forested systems with grasslands.		
9. Change fire regime?	Alters natural fire regime in Hawaii, it raises fuel load, which increases the intensity and spread of a fire subsequently threatening native flora (NPCI). Fountain grass has been noted to produce 51% more total biomass than native Hawaiian grass (California Uni) hence increasing fuel loadings (Tunison, 1992). Subsequently increasing the intensity and spread of a fire (Lloyd, 1992; PCA, 2005). <i>P.setaceum</i> produces large quantities of fine fuels that promote fire (Litton <i>et al</i> , 2006). The natural fire regime in Hawaii has been markedly altered by the rapid spread of alien grasses particularly <i>P. setaceum</i> amongst others (Smith and Tunison, 1992). Fountain grass turns brown and dry in the winter and becomes extremely flammable (Floridata). Dense stands are extreme fire hazard. By enhancing the fuel load it endangers native plant communities that are not fire tolerant (California Uni). Fires fuelled by fountain grass impact on ground- nesting birds and terrestrial animals as well (California Uni). <i>P.setaceum</i> is likely to greatly change the frequency and/or intensity of fire	H	H
Community Habitat			
10. Impact on composition (a) high value EVC	EVC= Plains Grassland (E) ; CMA=Mallee; Bioregion= Lowan Mallee; VH CLIMATE potential The plant typically forms dense monospecific stands in the understory that can exclude all other plants (Johnson; Tunison, 1992). Has exhibited universally superior competitive performance compared to native species (Daehler, 2003). The presence of a dense <i>P.setaceum</i> understory will lead to the eventual conversion of remaining forest fragments to grasslands without active control of <i>P.setaceum</i> (Litton et al, 2006). The species is aggressive and extremely competitive and is likely to dominant and displace existing vegetation in the lower stratum.	H	H
(b) medium value EVC	EVC= Shallow Sands Woodland (D) ; CMA=Wimmera; Bioregion= Lowan Mallee; VH CLIMATE potential The plant typically forms dense monospecific stands in the understory that can exclude all other plants (Johnson; Tunison, 1992). Has exhibited universally superior competitive performance compared to native species (Daehler, 2003). The presence of a dense <i>P.setaceum</i> understory will lead to the eventual conversion of remaining forest fragments to grasslands without active control of <i>P.setaceum</i> (Litton et al, 2006). The species is aggressive and extremely competitive and is likely to dominant and displace existing vegetation in the lower stratum.	H	H
(c) low value EVC	EVC= Coastal Dune Scrub (C) ; CMA=Glenelg Hopkins; Bioregion= Glenelg Plain; VH CLIMATE potential The plant typically forms dense monospecific stands in the understory that can exclude all other plants (Johnson; Tunison, 1992). Has exhibited universally superior competitive performance compared to native species (Daehler, 2003). The presence of a dense <i>P.setaceum</i> understory will lead to the eventual conversion of remaining forest fragments to grasslands without active control of <i>P.setaceum</i> (Litton et al, 2006). The species is aggressive and extremely competitive and is likely to dominant and displace existing vegetation in the lower stratum.	H	H
11. Impact on structure?	It is a highly aggressive, fire adapted coloniser that readily out competes native plants, prevents further regeneration of native trees and rapidly re establishes after burning (NPCI; Litton <i>et al</i> , 2006). The plant typically forms dense monospecific stands in the understory that can exclude all other plants (Johnson; Tunison, 1992) and	MH	H

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	has done so in Hawaiian lowland dry forests (Litton <i>et al</i> , 2006). Has exhibited universally superior competitive performance compared to native species (Daehler, 2003). As a result enhancing fuel load thus endangering native woody plant communities it invades (Tunison, 1992). Hence altering existing native ecosystem structure. It is likely that the strong negative impacts associated with invasive grasses are likely to impact on the long term structure of native tree populations (Litton <i>et al</i> , 2006). Infestations of this species are likely to have a major effect on <60% of the floral strata		
12. Effect on threatened flora?	The effect on threatened flora is unknown.	MH	L
Fauna			
13. Effect on threatened fauna?	The effect on threatened flora is unknown	MH	L
14. Effect on non-threatened fauna?	The plant typically forms dense monospecific stands in the understory that can exclude all other plants (Johnson; Tunison, 1992). The presence of a dense <i>P.setaceum</i> understory will lead to the eventual conversion of remaining forest fragments to grasslands without active control of <i>P.setaceum</i> (Litton et al, 2006). Translating to a loss of habitat for many terrestrial and avian species. Fires fuelled by fountain grass impact on ground- nesting birds and terrestrial animals as well (California Uni). It is eaten by some animals but not preferred therefore infestations do not provide an alternative food resource (Johnson; California Uni; Sherif and Siddiqi, 1988; NPCI). However the prominent seed heads are likely to be a good food source for birds. Therefore significantly modifying, permanently changing or eliminating habitat structure and food resources for animals subsequently affecting faunal populations.	MH	M
15. Benefits fauna?	No information exists in the literature that outlines the benefits this plant has on indigenous fauna. However the prominent seed heads are likely to be a good food source for birds. Dense monospecific stands (Johnson; Tunison, 1992) are likely to provide suitable habitat.	M	L
16. Injurious to fauna?	No reports on the plant being injurious to fauna (Walsh and Enwisle, 1996; Tunison, 1992).	L	MH
Pest Animal			
17. Food source to pests?	The prominent seed heads (Walsh and Enwisle, 1996) are likely to be a good food source for pest birds. However little has been documented on how this plant assists in the success of pest animals.	M	L
18. Provides harbor?	Dense monospecific stands (Johnson; Tunison, 1992) are likely to provide suitable habitat and coverage for pest species like rabbits. However little has been documented on how this plant assists in the success of pest animals.	M	L

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Agriculture			
19. Impact yield?	This species has been noted as an aggressive effect on crops, especially vineyards (Medio ambient Canarias, 1999) overseas. A weed of pasture (Johnson) that is able to form dense monospecific stands ... that can exclude all other plants (Johnson; Tunison, 1992). It is not a good pasture species (MISC 2003). The impact has not been quantified, however.	M	M
20. Impact quality?	Noted as a weed of agriculture, but no impacts on quality were recorded (Johnson; Tunison, 1992; MISC 2003).	L	M
21. Affect land value?	Unknown.	M	L
22. Change land use?	Unknown.	M	L
23. Increase harvest costs?	Unknown.	M	L
24. Disease host/vector?	Is pest free (Floridata).	L	ML