



# Environmental weed risk assessment

## White clover (*Trifolium repens*)

White clover is a herbaceous perennial legume that reproduces from seed as well as vegetatively from stolons. It is most likely native to Mediterranean Europe and has been used as a pasture legume in both Europe and the British Isles for centuries. It is widely sown throughout the world and has become naturalised in temperate and sub-tropical climates in all States of Australia where the rainfall exceeds 600mm. An estimated six million hectares of pastures contain white clover in Australia, predominantly in the eastern States.

The potential role and adaptive range in Western Australia (WA) is limited to high rainfall and irrigated dairy pastures in the south-west. It has been estimated that only 1% of the agricultural area is climatically suited to white clover (Hill 1996). In south-western Australia white clover is restricted to high rainfall and moisture gaining sites as it has a low drought tolerance and requires >700mm average annual rainfall (AAR) and a growing season >8 months (Moore et al. 2006). There are no records of it being present in north-western Australia (Figure 1).

White clover will not persist in northern WA without irrigation and even under irrigation is likely to struggle due to the high to extreme temperatures common from October to April.

### Weed lists

National-international:

- Not listed in Weeds of Australia (398 weed species) <https://weeds.org.au/weeds-profiles/>
- “This species is common and widespread throughout the southern and eastern parts of Australia. It is most commonly naturalised in Victoria, the ACT, eastern New South Wales, Tasmania, south-eastern South Australia and south-eastern Queensland. Also less common in south-western Western Australia, present in other parts of Queensland. ....regarded as an environmental weed in Victoria, New South Wales and Western Australia. It is most problematic in the sub-alpine regions of south-eastern Australia, including Kosciusko National Park, and in some areas it threatens endangered species and native plant communities” Weeds of Australia website [Fact sheet Index \(lucidcentral.org\)](http://lucidcentral.org)
- In the Global Compendium of Weeds, white clover is listed as an agricultural weed, casual alien, cultivation escape, environmental weed, garden thug, naturalised, weed (Randall 2017).

Western Australia:

- “White clover .... Frequently cultivated as a pasture legume , but also widely naturalised on roadsides, in swamps, around granite rocks, in wasteland and lawns between Perth and Albany” (Hussey et al. 2007).
- Recorded as naturalised in the following IBRA Regions of WA: Avon wheatbelt, Swan Coastal Plain, Jarrah forest and Warren (Keighery and Longman 2004).
- Not listed in naturalised taxa recorded from conservation lands in Western Australia (Keighery 1991).



**Figure 1** Distribution of white clover (*Trifolium repens*) in Australia (Source: ‘The Australasian Virtual Herbarium’)

### Environmental weed risk assessment

Assessed using the ‘Environmental weed risk assessment protocol for growing non-indigenous plants in the Western Australian rangelands’ (Moore et al. 2022)

Region	Filter A	Filter B	Weed Risk Assessment rating
	Is the species a weed in similar environments in Australia or overseas?	Is the species likely to persist in the environment without management*?	
<b>Kimberley</b>	No	No	<b>Negligible to low</b>
<b>Pilbara</b>	No	No	<b>Negligible to low</b>
<b>Gascoyne – Goldfields</b>	No	No	<b>Negligible to low</b>
<b>Agricultural area</b>	Yes	Yes (>700mm AAR)	<b>TBD</b>

\*Without management means no fertiliser, Rhizobia, irrigation, grazing management or control of competition from other species

### References

Hill MJ (1996) Potential adaptation zones for temperate pasture species as constrained by climate: a knowledge based logical modelling approach. *Australian Journal of Agricultural Research* **47(7)**: 1095-1117.

Hussey BMJ, Keighery GJ, Dodd J, Lloyd SG, Cousens RD (2007) ‘Western weeds. A guide to the weeds of Western Australia’. Second Edition. The Weeds Society of Western Australia Inc.

Keighery GJ (1991) Environmental weeds of Western Australia. *Kowari*, **2**: 180-188.

Keighery G, Longman V (2004) The naturalized vascular plants of Western Australia 1: Checklist, environmental weeds and distribution in IBRA regions. *Plant Protection Quarterly*, **19(1)**: 12-32.

Moore GA, Sanford P, Wiley T (2006) Perennial pastures for Western Australia. Department of Primary Industries and Regional Development, Western Australia, Perth. *Bulletin no. 4690*.

Moore G, Munday C, Barua P (2022) 'Environmental weed risk assessment protocol for growing non-indigenous plants in the Western Australian rangelands', Department of Primary Industries and Regional Development, *Bulletin no. 4924*, Perth.

Randall RP (2017) 'Global compendium of weeds' (No. Ed. 3).

Weeds of Australia database

[https://keyserver.lucidcentral.org/weeds/data/media/Html/trifolium\\_repens.htm](https://keyserver.lucidcentral.org/weeds/data/media/Html/trifolium_repens.htm) Site accessed 30 November 2021

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