



Pest risk assessment

Hairy water hyssop (*Bacopa lanigera*)

This publication has been compiled by Steve Csurhes of Biosecurity Queensland, Department of Primary Industries.

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Summary

Bacopa lanigera (known as 'hairy water hyssop' and 'hairy bacopa'), together with several congeners, are widely sold as aquarium plants in Australia and overseas. It is native to South America (Brazil and Paraguay).

B. lanigera has naturalised in Taiwan but this study was unable to find evidence that it was a major weed anywhere. Several congeners are listed as major weeds overseas.

The first naturalised population of *Bacopa lanigera* in Queensland was brought to the attention of Biosecurity Queensland in June 2009. However, it had been collected at several other sites previously, including a site in Cairns in 2004. For some time, it was misidentified as *B. caroliniana*.

Currently, *B. lanigera* has been recorded from several locations in Queensland and appears to be in its early stages of population development.

Pest risk assessment suggests that *B. lanigera* has the potential to become a troublesome aquatic weed, blocking dams and other slow-moving waterbodies. Based on the species' preferred climatic requirements, much of coastal Queensland appears at risk of invasion. The fact that the plant can form dense mats covering small dams means it could have significant local impacts in certain freshwater wetland habitats.

Based on the evidence collected in this assessment *B. lanigera* appears to be a "moderate risk" species and a worthy candidate for preventative control, wherever feasible. However, the same could be said for at least 15 species within the genus.

*Important note: This assessment is based on the best available literature at the time of writing. It is acknowledged that new information may come to hand over time and please send any additional information, or advice on errors, to the author.

Identity and taxonomy

Species: *Bacopa lanigera* Wettst.

Synonyms: *Herpestis lanigera* Cham. & Schlttdl.

Common names: hairy bacopa, giant bacopa, hairy water hyssop, giant babies tears, yellow bacopa

Family: Scrophulariaceae (some references place it in Plantaginaceae)

There are 70 – 100 species of *Bacopa*, two of which have naturalised in Queensland: *B. lanigera* and *B. caroliniana*, and a third considered native to Queensland, *B. monnieri* (however, this study questions the validity of the latter species' status as native).

B. lanigera has at least three forms: var. '*marginata*', var. '*serpyllifolia*' and var. '*variegata*' ('Variegated water hyssop') mentioned in the literature (GBIF undated).

Description and Biology

Bacopa lanigera is a floating freshwater aquatic plant with circular leaves and small purple flowers (Images 1 and 2). Leaves are oval-shaped with thin blades and no stem (Izzah 2022). Leaf veins are high contrast and clearly visible in younger growth (Izzah 2022). Leaves have a thin cuticle, or wax layer, protecting them from contaminated water, pathogens, and other hazards (Izzah 2022). Stems are hairy.



Image 1. Leaves and flowers of *Bacopa lanigera* (photo: Wendy Heath, Moreton Bay Regional Council).

In contrast, *B. monnieri* has smooth stems and hairless club-shaped leaves (WeedSpotters Newsletter 2009). Both *B. lanigera* and *B. caroliniana* have hairy stems. *B. caroliniana* is said to be easily identified by its aromatic lemon-scented leaves when crushed (Tarver *et al.* 1978).



Image 2. Flower of *Bacopa lanigera* (photo: Wendy Heath, Moreton Bay Regional Council).

Reproduction and dispersal

Reproduction is from seeds and from broken fragments. No information could be found on seed longevity.

Preferred habitat and climate

Bacopa lanigera prefers shallow, slow-moving freshwater wetlands with tropical to subtropical climates. In the wetlands of southern Brazil it is listed as a component of permanent wetlands, rather than ephemeral wetlands (Rolon *et al.* 2008). It prefers full sun.

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Native range and global distribution

B. lanigera is native to South America (Brazil and Paraguay) (Figure 1). GBIF (undated) records 11 specimens collected from Brazil (Rio de Janeiro), Paraguay (Canendiyu Province) and Taiwan. This study assumes that *B. lanigera* is naturalised in Taiwan.



Figure 1. Countries where *Bacopa lanigera* specimens have been collected (MBG 2010, Tropicos.org. Missouri Botanical Garden. 07 Oct 2025 <<http://www.tropicos.org/Name/29200791>>).

History as a weed overseas

B. lanigera has naturalised in Taiwan (GBIF undated). While this study was unable to find any evidence that *B. lanigera* was a major weed overseas, some of its congeners are significant weeds elsewhere. Holm *et al.* (1991) listed eleven *Bacopa* species as weeds overseas, viz. *B. aquatica*, *B. calycina*, *B. crenata*, *B. cuneifolia*, *B. dianthera*, *B. eisenii*, *B. erecta*, *B. monnieri*, *B. procumbens*, *B. rotundifolia* and *B. sessiliflora*. *B. crenata* is listed as a “serious” weed in Nigeria. *P. erecta* is listed as a “principle” weed in Guinea and Senegal. *B. monnieri* is listed as a “common” weed in India and Thailand (Holm *et al.* 1991). Randall (2002) listed 15 species of *Bacopa* as weeds:

- *B. amplexicaulis* (Pursh) Wettst.
- *B. aquatica* Aubl.
- *B. calycina* (Benth.) Engl. Ex De Wild.
- *B. caroliniana* (Walter) B.L. Rob.
- *B. crenata* (Beauv.) Hepper
- *B. cuneifolia* (Michx.) Wettst.
- *B. dianthera* (Sw.) Descole and Borsini
- *B. egenesis* (Poepp.) Pennell
- *B. eisenii* (Kell.) Pennell
- *B. erecta* Hutch. & Dalz
- *B. floribunda* (R.Br.) Wettst.
- *B. monnieri* (L.) Pennell
- *B. procumbens* (Mill.) Greenm.
- *B. rotundifolia* (Michx.) Wettst.

- *B. sessiflora* Pulle

B. caroliniana sometimes forms thick mats in streams and lakes in Florida (within its native range), but “usually does not create problems with boat traffic or fishing” (Tarver *et al.* 1978). Similarly, *B. monnieri* “forms mats on wet sand or mud along the shores of fresh and brackish water ponds, ditches, marshes and river banks” in Florida (Tarver *et al.* 1978). The latter stated that it “causes no recreational or economic problems.”

Use

B. lanigera is sold as an aquarium plant in Queensland and elsewhere, as are several congeners. A variegated form of *B. lanigera* var. ‘*variegata*’ is also sold.

B. monnieri has been used as a traditional medicine in India and its broad distribution across the tropics suggests it has been traded across the world for some time.

Current distribution and impact in Queensland

The first naturalised population of *Bacopa lanigera* in Queensland (on a property near Cedar Creek) was brought to the attention of Biosecurity Queensland in June 2009 (Image 3). However, the species had been collected previously in Cairns in 2004 (WeedSpotters Newsletter 2009). Other populations have since been detected. Several specimens held by the Queensland Herbarium were mis-identified as *B. caroliniana* until about 2009 (DERM 2009). It has also been recorded at Bahrs Scrub near the Gold Coast (Logan and Albert Conservation Association 2009).



Image 3. Naturalised population of *Bacopa lanigera* near Cedar Creek, southeast Queensland (2009) (photo: Wendy Heath, Moreton Bay Regional Council).

Currently, naturalised specimens have been recorded in the ‘wet tropics’ region of north Queensland and coastal south-east Queensland (Figure 2).



Figure 2. Records of naturalised populations of *Bacopa lanigera* (source: Atlas of Living Australia 2025).

Pest potential in Queensland

Climate-matching software called 'CLIMATCH' (BRS 2009) was applied to predict areas of Queensland where climate is similar to that experienced where *B. lanigera* is known to exist overseas (Rio de Janeiro and Taiwan). Coastal areas of Queensland, from Cooktown south to the border, appear suitable (Figure 3).

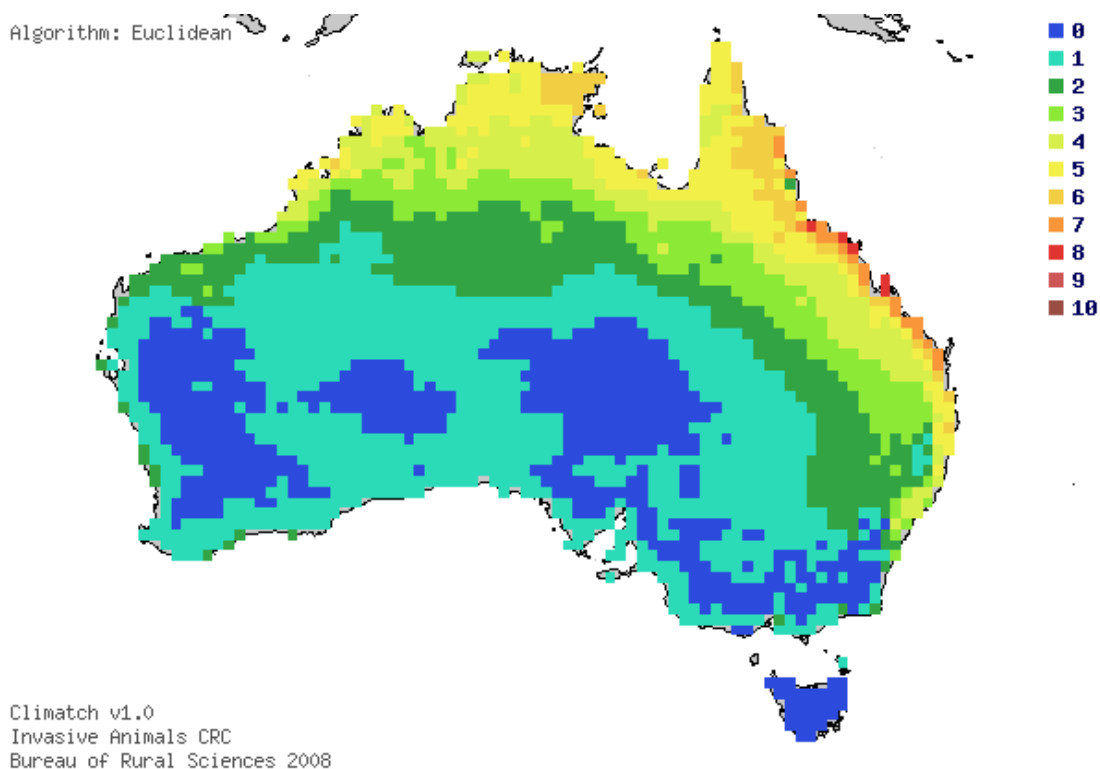


Figure 3. Area of Australia where climate appears suitable for survival of *Bacopa lanigera*.

The red and orange indicate areas where climate is highly suitable, yellow indicates area where climate is marginally suitable. Green and blue indicate areas where climate is considered unsuitable for this species.

The fact that naturalised populations of *B. lanigera* are currently thriving at multiple sites in coastal Queensland supports the climate-model.

While the species is locally abundant, it seems reasonable to predict that its population will continue to expand. Habitats at risk of invasion in the long-term are predicted to include wetland areas, especially creekbanks and shallow, slow-moving waterbodies such as dams.

Potential impacts could include loss of native vegetation and increased costs associated with maintaining dams and rivers in a useable condition.

Based on the evidence collected in this assessment *B. lanigera* appears to be a “moderate risk” species and a worthy candidate for preventative control, wherever feasible.

Feasibility of eradication in Queensland

B. lanigera has been sold as an aquarium plant for many years (exact period unknown). Herbarium records tend to underestimate the full extent of weed invasions and further searching for this species is highly likely to reveal additional populations in Queensland. While eradication from Queensland is unlikely, local-level elimination may be feasible, depending on the size of the population.

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