

# Azolla rubra

## COMMON NAMES

Pacific azolla, azolla, red azolla

## BIOSTATUS

Native

## CATEGORY

Vascular

## STRUCTURAL CLASS

Ferns

## DETAILED DESCRIPTION

Aquatic, floating, dark-red (when exposed) or glaucous-green plants, usually forming ovate to ovoid patches on the surface of water bodies.

**Branching** irregular; roots peg-like, simple (not branched). **Leaves** triangular; apex rounded; margins membranous, translucent; surface smooth, bright red or glaucous-green. **Microsporangiate massulae** spherical, surface conspicuously barbed. **Megasporocarps** brown, partially obscured by leaf lobe.

## SIMILAR TAXA

*Azolla pinnata* which is presumably introduced in New Zealand (it could also have arrived naturally from Australia). *Azolla pinnata* is best distinguished from *A. rubra* by its pinnate rather than simple roots. *Azolla pinnata* is extremely invasive and has largely replaced *A. rubra* in Northland and Auckland.

## DISTRIBUTION

Indigenous. New Zealand: Kermadec Islands (Raoul Island), North Island, South Island, Chatham Islands (Chatham Island (Rēkohu), discovered 2023). Widespread throughout the Pacific extending into Asia and India.

## HABITAT

Coastal to lower montane. An aquatic plant frequenting shallow water bodies such as ponds, lake margins, dams and slow flowing streams. Also present in swamps on muddy ground. Occasionally establishing in cattle troughs. *Azolla* is most common in shallow eutrophic water bodies but it can also establish in more acidic wetland systems, where it is often a conspicuous plant of the lagg zone.

## CURRENT CONSERVATION STATUS

2023 | Not Threatened | Qualifiers: SO

[Jump to previous conservation statuses](#)

## DETAILED TAXONOMY

### FAMILY

Salviniaceae

### AUTHORITY

*Azolla rubra* R.Br.

### SYNONYMS

*Azolla rubra* R. Br.; *Azolla filiculoides* var. *rubra* (R.Br.) Strasb.; *Azolla filiculoides* Lam. auct. non. N.Z. authors

### TAXONOMIC NOTES

*Azolla rubra* has undergone a number of name changes over the last forty years. New Zealand plants have recently reverted back to *A. rubra*—for more information see Brownsey & Perrie (2013).



Near Wairoa, East Coast. Photographer: John Sawyer, Date taken: 01/11/2010, Licence: CC BY-NC.



Waingawa River, Wairarapa. Photographer: Jeremy R. Rolfe, Date taken: 30/09/2017, Licence: CC BY.

## ENDEMIC TAXON

No

## ENDEMIC GENUS

No

## ENDEMIC FAMILY

No

## ECOLOGY

### LIFE CYCLE AND DISPERSAL

Minute spores are dispersed by wind, water and attachment (Thorsen et al., 2009).

### PROPAGATION TECHNIQUE

Easily grown (too easily!) in a pond or slow flowing stream. Plants tend to spread by fragmentation. Tolerant of shade but flourishes best in full sun. Inclined to be aggressive, especially in eutrophic water. Due to the cyanobacteria found within the plant, *Azolla* plants are able to fix atmospheric nitrogen. *Azolla* is also an important food source for the tadpole phase of the introduced Australian frogs *Litoria raniformis* and *L. aurea*

### WETLAND PLANT INDICATOR STATUS RATING

OBL: Obligate Wetland

Almost always is a hydrophyte, rarely in uplands (non-wetlands).

## OTHER INFORMATION

### ETYMOLOGY

**azolla:** From the Greek azo 'to dry' and ollo 'to kill', killed by dryness

**rubra:** Red

### NVS CODE

AZORUB

### CHROMOSOME NUMBER

2n = 44

### PREVIOUS CONSERVATION STATUSES

2017 | Not Threatened | Qualifiers: SO

2012 | Not Threatened

2009 | Not Threatened

2004 | Not Threatened

[Jump to current conservation status](#)

### REGIONAL CONSERVATION STATUSES

Otago: 2024 | Regionally Not Threatened

## REFERENCING AND CITATIONS

### REFERENCES AND FURTHER READING

Brownsey PJ, Perrie LR. 2013. *Azolla rubra* revisited. *New Zealand Botanical Society Newsletter 111*: 6–7.

de Lange PJ, Hitchon T. 2023. *Azolla rubra* R.Br. (Salviniaceae) on Rēkohu / Wharekauri / Chatham Island. *Perspectives in Biodiversity 1(1)*: 43–49.

Thorsen MJ, Dickinson KJM, Seddon PJ. 2009. Seed dispersal systems in the New Zealand flora. *Perspectives in Plant Ecology, Evolution and Systematics 11*: 285–309. <https://doi.org/10.1016/j.ppees.2009.06.001>.

### ATTRIBUTION

Description prepared by P.J. de Lange (1 August 2009). Description based on live plant material and herbarium specimens

### **NZPCN FACT SHEET CITATION**

Please cite as: de Lange, P.J. (Year at time of access): *Azolla rubra* Fact Sheet (content continuously updated). New Zealand Plant Conservation Network. <https://www.nzpcn.org.nz/flora/species/azolla-rubra/> (Date website was queried)

### **MORE INFORMATION**

<https://www.nzpcn.org.nz/flora/species/azolla-rubra/>

### **PDF DATE**

11 March 2025