

Azolla rubra

COMMON NAME

Pacific azolla, azolla, red azolla

SYNONYMS

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

FAMILY

Salviniaceae

AUTHORITY

Azolla rubra R.Br.

FLORA CATEGORY

Vascular – Native

ENDEMIC TAXON

No

ENDEMIC GENUS

No

ENDEMIC FAMILY

No

STRUCTURAL CLASS

Ferns

NVS CODE

AZOFIL

CHROMOSOME NUMBER

2n = 44

CURRENT CONSERVATION STATUS

2017 | Not Threatened | Qualifiers: SO

PREVIOUS CONSERVATION STATUSES

2012 | Not Threatened

2009 | Not Threatened

2004 | Not Threatened

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.

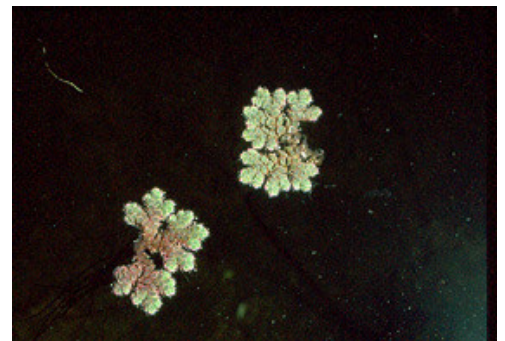
WETLAND PLANT INDICATOR STATUS RATING

OBL: Obligate Wetland

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



Azolla. Photographer: Jeremy R. Rolfe, Licence: CC BY.



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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.

LIFE CYCLE

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*

ETYMOLOGY

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

rubra: Red

TAXANOMIC NOTES

Azolla rubra has under gone 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).

ATTRIBUTION

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

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>.

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/>