

# 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

2012 | Not Threatened

## PREVIOUS CONSERVATION STATUSES

2009 | Not Threatened

2004 | Not Threatened

## DISTRIBUTION

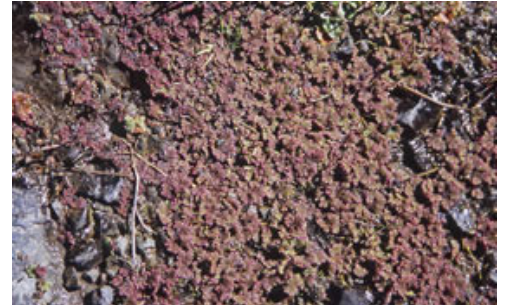
Indigenous. New Zealand: Kermadec (Raoul Island), North and South Islands. Widespread throughout the Pacific extending into Asia and India.

## HABITAT

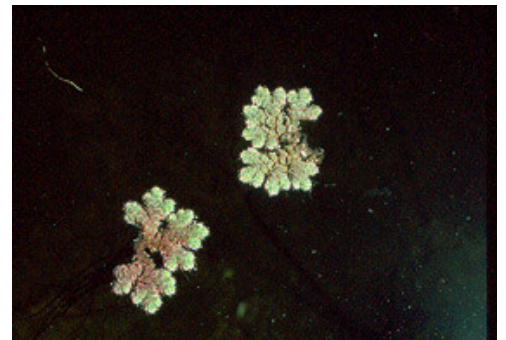
Coastal to lower montane. An aquatic plant frequenting shallow water bodies such as ponds, lake margins, dams and slow flowing streams. Also present in swamps on muddy ground. Occasionally establishing in cattle troughs. *Azolla* is most common in shallow eutrophic water bodies but it can also establish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

## FEATURES

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



Azolla. Photographer: Jeremy Rolfe



cult. Photographer: John Smith-Dodsworth

## 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.

## FLOWERING

Not applicable - spore producing

## FLOWER COLOURS

No flowers

## FRUITING

Not applicable - spore producing

## 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 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).

## 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, P.J.; Perrie, L.R. 2013: *Azolla rubra* revisited. *New Zealand Botanical Society Newsletter* 111: 6-7.

Thorsen, M. J.; Dickinson, K. J. M.; Seddon, P. J. 2009. Seed dispersal systems in the New Zealand flora.

*Perspectives in Plant Ecology, Evolution and Systematics* 2009 Vol. 11 No. 4 pp. 285-309

## 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/>