

# Azolla pinnata

## COMMON NAMES

ferny azolla

## SYNONYMS

*Azolla pinnata* subsp. *asiatica*

## FAMILY

Salviniaceae

## AUTHORITY

*Azolla pinnata* R.Br.

## FLORA CATEGORY

Vascular – Exotic

## STRUCTURAL CLASS

Ferns

## NVS CODE

AZOPIN

## CONSERVATION STATUS

Not applicable

## SIMPLIFIED DESCRIPTION

A small aquatic free floating perennial fern which forms a conspicuous red (green in shaded areas) mat on the water surface. Plants are 1–3 cm long, triangular in outline, and regularly branched. Leaves green to red. Roots densely covered with branched, fine, hair-like rootlets.

## DISTRIBUTION

Introduced and Naturalised. New Zealand: North Island (abundant in the north to the Rotorua Lakes with scattered sites further south to Levin). Indigenous to Africa, Asia, Australia.

## HABITAT

Still and slow flowing water bodies in warm areas.

## WETLAND PLANT INDICATOR STATUS RATING

OBL: Obligate Wetland

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

## DETAILED DESCRIPTION

Tiny free-floating aquatic fern, forming red-coloured mats (green in shaded areas). **Plants** 25 × 20 mm, triangular or 5-angled in outline, regularly branched. **Leaves** usually not overlapping, green turning red. **Roots** to 5 cm long; with fine, lateral rootlets.

## SIMILAR TAXA

*Azolla rubra*—a native floating fern. *A. rubra* is more ovate and irregularly branched. Rootlets are unbranched. In comparison *A. pinnata* has regular 2 pinnate branching and its roots have fine rootlets.

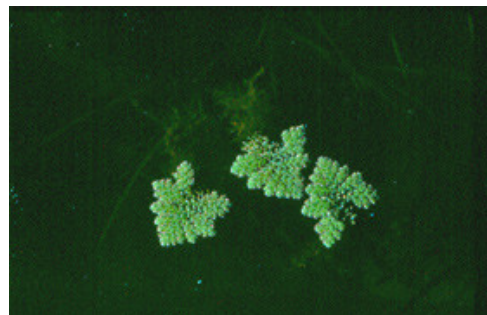
## LIFE CYCLE

This perennial reproduces rapidly by fragmentation, forming dense mats across nutrient-rich still waters. Produces spores which may be spread by waterfowl.

Other dispersal mechanisms include downstream via waterflow and into new catchments via contaminated diggers, eel nets, boats and trailers, water fowl, occasionally by wind blown spores.

## YEAR NATURALISED

1969



*Azolla pinnata*. Photographer: John Smith-Dodsworth, Licence: CC BY-NC.



Lake Wairua. Jan 2009. Photographer: Colin C. Ogle, Licence: CC BY-NC.

## ORIGIN

Tropical Africa, Asia, Australia

## REASON FOR INTRODUCTION

Possibly contaminant of ornamental pond plants, or a natural introduction from Australia being spread by migratory waterfowl.

## CONTROL TECHNIQUES

Can be managed using floating booms that push floating plants to one end of a dam or small water body, then remove manually/mechanically. Only short-term control usually achieved.

## TOLERANCES

Tolerates low to high nutrient water, high to moderate temperature. Intolerant of low temperatures and heavy shade. Does not dominate in moving water or expose surfaces.

## ETYMOLOGY

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

**pinnata:** From the Latin pinna 'feather', in botany pinnatus 'pinnate' refers an arrangement of leaves, veins or branches in rows along a central axis, similar to the structure of a feather.

## ENVIRONMENTAL WEED (2024)

**This plant is named in a list of 386 environmental weeds in New Zealand 2024 prepared by DOC.** 759 candidate species were considered for inclusion on this new comprehensive list of environmental weeds in New Zealand. The species considered were drawn from published lists of weed species, lists of plants that must be reported or managed by law if observed, existing national and regional programmes and agreements for pest management, and species already managed by the Department of Conservation (DOC). Candidate species were then assessed to see if they were fully naturalised and whether they have more than minor impacts in natural ecosystems. Read the full report [here](#).

## ATTRIBUTION

Factsheet prepared by Paul Champion and Deborah Hofstra (NIWA).

## REFERENCES AND FURTHER READING

Champion P. et al. 2020. Freshwater Invasive Species of New Zealand 2020. NIWA publication.

<https://docs.niwa.co.nz/library/public/FreInSpec.pdf>

Coffey BT, Clayton JS. 1988. New Zealand water plants: a guide to plants found in New Zealand freshwaters.

Ruakura Agricultural Centre, Hamilton, NZ. 65 p.

Johnson AT, Smith HA. 1986. Plant Names Simplified: Their pronunciation, derivation and meaning. Landsman Bookshop Ltd, Buckenhill, UK.

Johnson PN, Brooke PA. 1989. Wetland plants in New Zealand. DSIR Field Guide, DSIR Publishing, Wellington, NZ. 319 p.

Popay I, Champion P, James T. 2010. An illustrated guide to common weeds of New Zealand, 3rd edition. NZ Plant Protection Society Inc, Christchurch, NZ. 416 p.

## MORE INFORMATION

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

## PDF DATE

17 September 2024