

Threatened Species of the Northern Territory

Mitrella tiwiensis

Conservation status

Australia: Vulnerable

Northern Territory: Vulnerable



Photo: K. Brennan

Description

Mitrella tiwiensis (formerly known as *Mitrella* sp. Melville Island) is a vine to 10 m, forming a semi-weeping shrub when young. The leaves are shiny, dark-green above, bluish (glaucous) beneath. The branchlets are distinctly zig-zagged. The flowers are pinkish-orange, faintly scented. The fruit is a multi-seeded berry, pale pink/green.

Fruiting: Jun, Sep, Dec.

Distribution

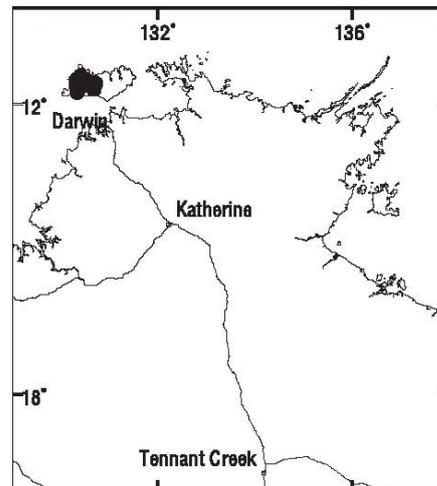
Recorded as *Desmos* D24710 in the Rainforest Atlas (Liddle *et al.* 1994), this recently described species is known only from the Tiwi Islands. In the Rainforest Atlas, it is recorded 22 times from approximately nine localities.

Conservation reserves where reported:

None.

Ecology

It is recorded as growing in monsoon rainforest in deep shade associated with perennial springs, in moist leaf litter and stagnant mulch.



Known locations of *Mitrella tiwiensis*.

Conservation assessment

This species was very difficult to code as very little data on abundance are available. This species is distinct and as an understory plant, juveniles are relatively visible when present. Russell-Smith recorded this species as common in a rainforest patch east of Rocky Point (NT Herbarium Holtze Database) and has characterized adult population sizes of common rainforest species as large if >50 individuals were present (Russell-Smith 1992). In one other rainforest patch only 3-4 individuals were observed (R. Kerrigan *pers.*

obs.). However, vines are often difficult to trace in monsoon rainforests to gain an accurate impression of abundance. Population size for this species is highly speculative and, assuming populations located in the 1980s are still extant, it is estimated at <1000.

This species is considered adequately surveyed, based on extensive surveys on the Tiwi Islands and rain forest habitats across the Top End (Russell-Smith 1991; Fensham and Woinarski 1992; Woinarski *et al.* 2003.). Over 7000 plant records have been collected from wet and dry rainforest communities on the Tiwi Islands (Woinarski *et al.* 2003).

The extent of occurrence is estimated at 960 km² and area of occupancy estimated as 180 ha based on the size of rainforest patches where collected (Fensham and Woinarski 1992).

Some specific survey was undertaken for this species from 1997 to 2000 by the NT Herbarium. Collections were made from Maxwell Creek, Garden Point, and Jump-up Jungle during those surveys.

Based on present knowledge and using the precautionary principle, this species is classified as **Vulnerable** (under criteria D1+2) based on:

- a restricted area of occupancy estimated to be <20km²; and
- a small population size estimated to be <1000 individuals.

Threatening processes

Very little is known about the threatening processes affecting this species, which may be naturally rare. However, monsoon rainforests generally are vulnerable to disturbance from cyclones, cattle, buffalo, pigs and dry-season wildfires (Panton 1993; Russell-Smith and Bowman 1992, Woinarski

et al. 2003). Rocky Point suffered damage in 1999 from Cyclone Thelma and the current health of the population east of Rocky Point is unknown. Cyclonic frequency for the Tiwi Islands is documented at 0.8 to 1.2 cyclones per annum (Bureau of Meteorology).

Woinarski *et al.* (2003) also noted that monsoon rainforests are likely to be most susceptible to changes in ground water hydrology as a result of high water use from *Acacia mangium* plantations being developed on the Tiwi Islands.

Conservation objectives and management

A Recovery Plan for this species, and other threatened plants on the Tiwi Islands, is due to be released in 2007, but many actions in its draft are currently being implemented.

Research priorities are to:

- i. provide a more detailed assessment of its distribution, habitat requirements and population size; and
- ii. provide an assessment of the factors limiting distribution, and/or threats to its survival.

Further survey may yield additional populations. A monitoring program should be established for at least representative populations.

Compiled by

Raelee Kerrigan
Ian Cowie
[April 2006]

References

Fensham, R.J., and Woinarski, J.C.Z. (1992).
Yawulama: the ecology and conservation of monsoon forest on the Tiwi Islands, Northern

- Territory. Report to DASET. (Conservation Commission of the Northern Territory, Darwin).
- Liddle, D.T., Russell-Smith, J., Brock, J., Leach, G.J., and Connors, G.T. (1994). *Atlas of the vascular rainforest plants of the Northern Territory*. Flora of Australia Supplementary Series No. 3. (ABRS, Canberra.)
- Panton, W.J. (1993). Changes in post World War II distribution and status of monsoon rainforests in the Darwin area. *Australian Geographer* 24, 50-59.
- Russell-Smith, J. (1991). Classification, species richness, and environmental relations of monsoon rain forest in northern Australia. *Journal of Vegetation Science* 2, 259-278.
- Russell-Smith, J. (1992). Plant populations and monsoon rain forest in the Northern Territory, Australia. *Biotropica* 24, 471-487.
- Russell-Smith, J., and Bowman, D.M.J.S. (1992). Conservation of monsoon rainforest isolates in the Northern Territory. *Biological Conservation* 59, 51-63.
- Woinarski, J., Brennan, K., Cowie, I., Kerrigan, R., and Hempel, C. (2003). *Biodiversity conservation on the Tiwi islands, Northern Territory. Part 1. Plants and environments*. 144 pp. (Department of Infrastructure Planning and Environment, Darwin.)