

Threatened Species of the Northern Territory

Typhonium mirabile

Conservation status

Australia: Endangered

Northern Territory: Endangered



Photo: K. Brennan

Description

Typhonium mirabile is a small tuberous herb with annual aerial parts. The leaves are blue-green, cordate, and held on or just above the soil surface. The spathe or bract of flower is partly buried in soil; the part below is white cream with grey mottling; the aerial part mottled grey-green; the spadix limb is smoky grey; greenish towards the base.

Flowering: Oct.

Fruiting: Dec.

Distribution

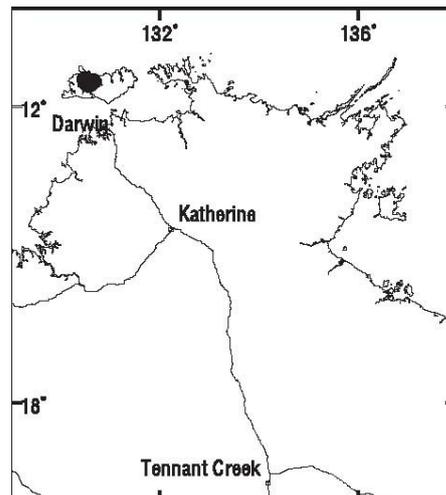
This species is endemic to the NT. Its entire known range was restricted to five (now, three) locations in the western half of Melville Island.

Type material for this species was taken from a specimen cultivated by D. Jones from Hanguana Jungle in 1984 (Hay 1993). Hay (1996) recorded that despite survey effort on Bathurst Island, no populations have been found there, and recent targeted survey for this species as part of a biodiversity assessment (Woinarski *et al.* 2003) located only one additional population.

Area of occupancy is estimated at 5-10 ha.

Conservation reserves where reported:

None.



Known locations of *Typhonium mirabile*.

Ecology

Very little is known of the ecology of this species. The aboveground annual shoots are seasonally dormant, emerging from an underground corm (bulb) during the wet season. It is difficult to distinguish between species of this genus without reproductive material as the leaves are commonly polymorphic.

It occurs very sporadically in groups in eucalypt woodland on lateritic and sandy soils, and in patches where the leaf litter is sparse or absent, mainly near the bases of young *Cycas* plants or in shade. It has been recorded from hillslopes and ridges.

Conservation assessment

Although this species is seasonally dormant and cryptic in the landscape it is considered adequately surveyed, based on the strong survey effort in the area (Woinarski *et al.* 2003) and the high profile nature of this species with collectors. While more populations may exist, the paucity of collections is considered to accurately reflect its very restricted distribution and abundance.

The largest known population contained around 60 individuals (Brock *et al.* 2000), suggesting the total number of mature individuals would be <250. Unfortunately, this population and another nearby one were cleared for forestry plantation in 2004.

This species qualifies as **Endangered** (under criteria B1ab(iii)+2ab(iii); D) based on:

- an extent of occurrence <5000 km² ;
- an area of occupancy <500 km²;
- a small population size (<250 mature individuals); and
- a current and projected decline in quality of habitat of this species in the near future as a result of clearing for expansion of plantation forestry.

Threatening processes

Clearing of habitat for plantation forestry development is a threat for this species. Extensive areas within the western half of Melville Island are set aside for land clearing and plantings of *Acacia mangium*. "Soils, topography and rainfall dictate that environments suitable for plantation development are restricted largely to tall open forests dominated by *Eucalyptus tetradonta*, *E.miniata* and/or *E. nesophila*" (Forsci 1999). The preferred plantation habitat and designated planting region of the western half

of Melville coincide with known populations and preferred habitat of this species.

The eucalypt forests are also affected by feral buffalo, cattle and horses. Increased clearing, road development and activity in the area around known populations may increase the invasion of exotic plants species such as mission grass *Pennisetum polystachion* and gamba grass *Andropogon gayanus* (Woinarski *et al.* 2003). Although the underground corm and seasonal nature of this species offers protection from fire, the effect of perennial grass invasions on this species is unknown.

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.

Habitat protection at the known localities is required to maintain the status of the species. The Tiwi Islands Forestry Strategic Plan (Hadden 2000) provided the commitment that all populations of this species would be protected from clearing, with an exclusion buffer of 50 m around their perimeter. However, two of the few populations, including the largest known, were subsequently eliminated by land clearing for forestry plantation.

Research priorities are to:

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

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

Complied by

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References

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