

Threatened Species of the Northern Territory

Typhonium taylori

Conservation status

Australia: Endangered

Northern Territory: Endangered



Photo: R. Kerrigan

Description

Typhonium taylori is a small deciduous geophytic herb. The leaf blade is subdeltoid to elliptic or narrowly lanceolate, to 45 mm long. The flower is accompanied by a leaf. The spathe is about 6.5 cm long. The spadix appendage is filiform, exceeding the spathe by c.1 cm, deflected such that it projects more or less horizontally from the spathe mouth.

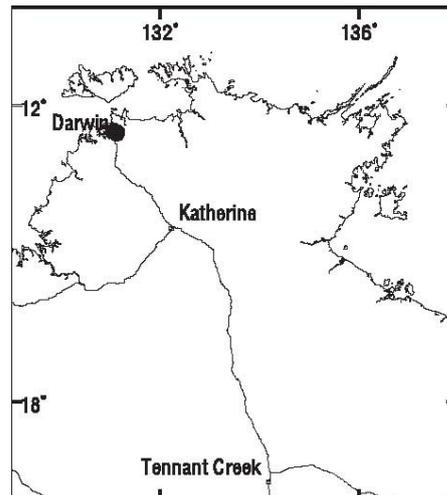
It is difficult to distinguish between species of this genus without reproductive material as the leaves are commonly polymorphic. Diagnostic characters within the genus include the arrangement of flowers and the timing of emergent leaf parts relative to the emergent inflorescence. This species is documented as having an inflorescence emergent with new season leaves.

Flowering: Jan.

Distribution

This species is endemic to the Northern Territory, and positively known only from the type locality on the edge of the Howard River floodplain. A second collection of sterile material nearby is also likely to be *T. taylori*.

Conservation reserves where reported:
None.



Known locations of *Typhonium taylori*.

Ecology

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.

The species occurs in seasonally saturated sandy soil in nutrient poor grass/sedgeland with occasional *Melaleuca viridiflora*.

Conservation assessment

S. Taylor collected type material for this species in 1996 (Hay 1997). Recent targeted survey for this species in the Howard River Floodplain as part of a biodiversity

assessment survey (Cowie 2002) did not relocate or uncover any additional populations of this species.

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 and the high profile of this genus amongst collectors. While more populations may exist, the paucity of collections of this species is considered to accurately reflect its very restricted distribution and abundance.

There are no data on population size for this species. However, information based on populations of similar species in this genus would indicate population size may be between 50 and 100 individuals (Brock *et al.* 2000).

Given that a minimum convex polygon cannot be formed from two collections, the extent of occurrence for this species is based on a polygon of 2 km long by 100 m wide (50 m either side of the collection localities) and is estimated at 0.2 km². Area of occupancy is estimated at 2 ha.

Using a precautionary approach this taxon could qualify for Critically Endangered. However, in consideration of the collection bias associated with this species we have listed it as **Endangered** (under criteria B1ab(iii)+2ab(iii); D) based on:

- an estimated population size of <250 mature individuals;
- an extent of occurrence <5000 km²;
- an area of occupancy <500 km²; and
- an inferred decline in quality of habitat as a result of sand mine activity and land subdivision.

Threatening processes

Threats to this species are potential disturbance of habitat from sand mining, clearing for subdivision and changes to hydrology.

Sand sheets in the Howard River Floodplain have been identified as an extractive mineral resource (Doyle 2003), and I. Cowie (*pers. comm.*) indicated that sand sheet communities visited during surveys in 2000 and 2001 had either shown evidence of sand mining activity or were pegged for potential sand mining activity. Although no proposed future extractive leases coincide with the two known populations of this species, there is a correlation between preferred habitat and land units already supporting extractive leases, and a very high proportion of this habitat is likely to be affected by sand mining (Price *et al.* 2005).

Expected population expansion in Darwin and Litchfield Shire will result in increased water demands (Haig *et al.* 2003). The impact on hydrology of the expansion of the McMinns Borefield (Haig *et al.* 2003) and inferred increase in water consumption by domestic bores is unknown. Similarly the impact of increased runoff as a result of urbanisation is unknown (Haig 2003) and needs to be investigated further.

Conservation objectives and management

Habitat protection at the known localities is required to maintain the status of the species. 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. A monitoring program should be established.

Complied by

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References

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