# Threatened Species of the Northern Territory

## *Helicteres macrothrix*
## (previously H. sp.Glenluckie Creek)

Photo: Ian Cowie

**Conservation status**
Australia: Endangered
Northern Territory: Endangered

### Description

*Helicteres macrothrix* (listed as *H.* sp. Glenluckie Creek) is a multi-stemmed subshrub to 50 cm high with erect to ascending branches. The aerial parts of the plant are annual, with perennial root stock. The flowers are pink- purple. The fruits are green and woolly-hairy.

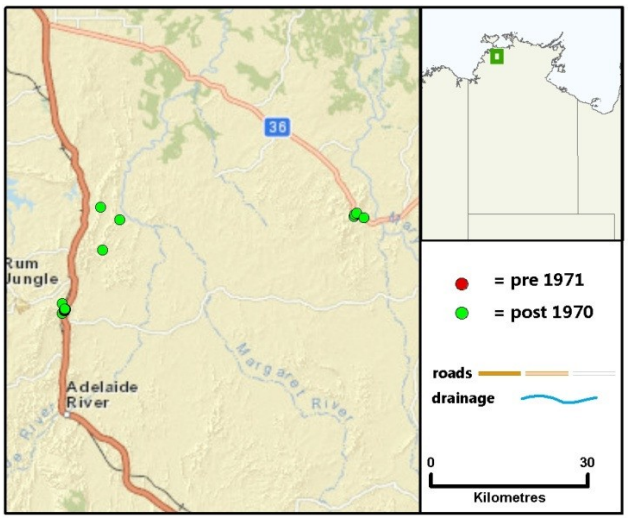
Flowering: January, September–November.
Fruiting: January, March, October–November.

Flowers of *Helicteres macrothrix* Photo: I. Cowie

### Distribution

The species is endemic to the Northern Territory (NT). It has been recorded from three populations – near Mt Bundey, near Batchelor and in the Lake Bennett area.

The known extent of occurrence of this species is 915 km$^2$.
*Conservation reserves where reported:*
Mary River National Park.




Known locations of *Helicteres macrothrix*

### Ecology

This species occurs in woodlands dominated by *Eucalyptus tectifica*, *E. tetrodonta* or *E. miniata*, on sandy loam on rocky siltstone slopes or granitic rocks.

No individuals were identified as juveniles in recent surveys of this species, however many individuals were observed to resprout from a perennial root stock, often vigorously, after fire.

The Mt Bundey subpopulation has longer inflorescences and may warrant recognition at subspecific level.

## Conservation assessment

Survey of populations at the Glenluckie Creek and particularly Lake Bennett localities in 2002 indicated that populations are localised but may be abundant where found. Quadrat counts from both populations gave an average density of plants per $m^2$ and a preliminary population estimate of over 100 000 with an area of occupancy of approximately 10 ha.

At the Mt Bundey locality the area of occupancy has been estimated at c. 50 ha with 0.1877 ± 0.0117 plants per $m^2$ recorded giving an estimate of 93 850 ± 5 850 mature individuals. Of these, an estimated 40 000 are present on Mary River National Park. Some apparently suitable habitat in the area remains to be surveyed and there is a good possibility that the subpopulation is larger than current estimates indicate.

While it is possible that extensive targeted searches may uncover additional subpopulations of this species there is a high degree of confidence in the broader distributional data.

This taxon is classified as **Endangered** (under criteria B1ab(iii,iv,v)+2ab(iii,iv,v)) based on:

- extent of occurrence estimated to be <5 000 $km^2$;
- area of occupancy estimated to be <500 $km^2$;
- known to exist at no more than five locations; and
- a projected decline in extent of occurrence, area of occupancy and quality of habitat.

## Threatening processes

The Glenluckie Creek and Lake Bennett populations of this species are vulnerable to potential clearing for either subdivision (NTG 2000), maintenance of railway easement or road maintenance. Both these populations are likely to have already suffered some decline from land clearing and road and railway construction.

At Mt Bundey, part of that subpopulation has been lost through building of the Arnhem Highway. That area is the major source of crushed rock for construction purposes in the Darwin area. Several quarries are already active and at least 16 other mining tenements have been granted. Plants are most likely to be affected by development of access roads and processing areas associated with quarry activities as they occur on flatter areas down slope of rocky outcrops. The industry is likely to expand in future with a number of major construction projects scheduled for the region in the next few years.

The Glenluckie Creek site and some areas at Lake Bennett and Mt Bundey are undergoing invasion by the perennial weed Gamba Grass (*Andropogon gayanus*) and coupled with related changes in fire regimes, soil hydrology and nitrogen availability this grass is a serious developing threat. *Andropogon* is likely to 'smother' individuals and alter fire intensity and/or frequency and potentially affect recruitment.

Gamba Grass is an introduced perennial grass species producing a high-biomass. It is now well established and abundant in Eucalypt woodland at Glenluckie Creek. Compared with native grasses, Gamba Grass forms taller, denser stands, curing later in the Dry season. This results in substantial changes to savanna fire regimes. It can dramatically increase fuel loads from the 2–4 tonnes/ha typical for native grasses to 11–15 tonnes/ha or sometimes even 30 tonnes/ha resulting in later, more intense fires that can kill or reduce the vigour of tree species (Rossiter et al. 2003; Ferdinands et al. 2006).

Gamba Grass may also out-compete native woody species both by grossly altering the availability of nitrogen to native plant species and by using larger amounts of water than native grasses (Rossiter et al. 2004; Rossiter-Rachor et al. 2009). It is also much taller than *Helicteres macrothrix*and dense stands of Gamba Grass may shade other plants.

Kean and Price (2003) reported that 80 per cent of rural blocks in the nearby Humpty Doo area contain mission grasses (*Cenchrus polystachios* and *C. pedicellatus*). They also concluded that mission grasses are so widespread in the Darwin region that control can only be contemplated in very small areas requiring frequent treatment of re-invading plants. This species is also known to invade undisturbed bushland, and is prevalent on disturbed land and along roadsides. Therefore, any further clearing activities in or around the populations of *Helicteres macrothrix* may either directly affect population numbers by active removal of plants, or more indirectly through competition with invading exotic species or via altered fire regimes as a result of the presence of exotic species.

## Conservation objectives and management

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. If clearing becomes imminent, habitat protection on private lands and state lands may need to be negotiated.

A monitoring program should be established at some representative populations.

## Complied by

Ian Cowie
Raelee Kerrigan
Ben Stuckey
[updated December 2012]

## References

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