

Threatened species of the Northern Territory

Cycas armstrongii

Conservation status

Australia: Not Listed

Environment Protection and Biodiversity Conservation Act 1999

Northern Territory: Vulnerable

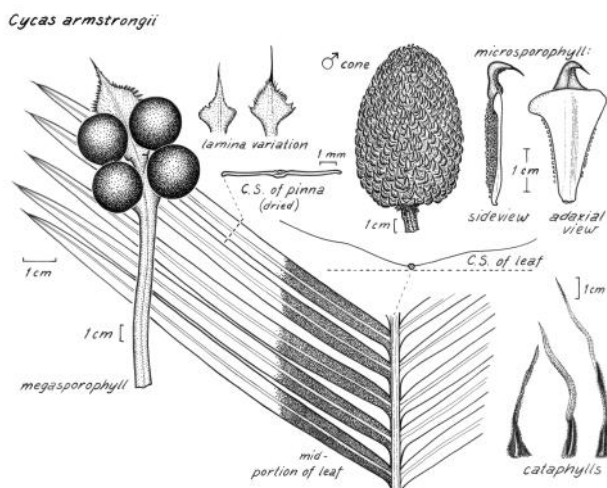
Territory Parks and Wildlife Conservation Act 1976

Description

Cycas armstrongii is a medium-sized cycad up to 6 m tall with a slender trunk 6-12 cm in diameter. Branching occurs along with occasional offsets and basal suckers. Leaves form an obliquely erect to spreading crown. Each has 160-300 leaflets attached to the rachis at about 70° with a prominent midrib above. Easily confused with several other species of *Cycas*.

Flowers: August

Fruits: most months.



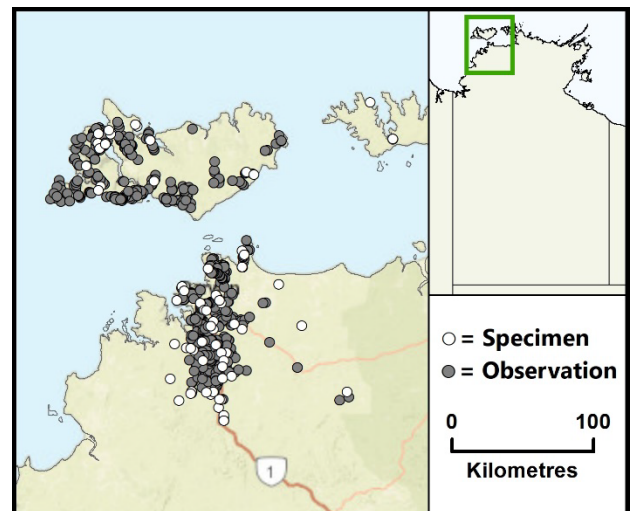
Credit: Monica Osterkamp



Credit: B.M. Stuckey

Distribution

This species is endemic to the Northern Territory (NT). It is known from Gunn Point to Hayes Creek, west to within 50 km of the coast and east to the Wildman River catchment. It also occurs on the Tiwi Islands and Cobourg Peninsula.



Caption: Known locations of *Cycas armstrongii* in the NT (nrmmaps.nt.gov.au)

NT conservation reserves where reported: Berry Springs Nature Park, Blackmore River Conservation Reserve, Casuarina Coastal Reserve, Djukbinj National Park, Garig Gunak Barlu National Park, Holmes Jungle Nature Park, Howard Springs Nature Park, Howard Springs Hunting Reserve, Litchfield National Park, and Manton Dam Recreation Area.

Ecology

It occurs mainly in open grassy woodland on yellow and red earths, limited in the area by drainage.

Threatening processes

Land clearing due to the expansion of Darwin, rural residential living, horticulture, agriculture and forestry is a major threat to the species. Available habitat in and around Darwin and the Litchfield Shire has been reduced and further land clearing is expected as Darwin expands. In particular, prime cycad habitat with deep loamy soil has been identified as land suitable for horticulture and agriculture. Substantial areas of prime habitat on the Tiwi Islands will be cleared for forestry.

In areas not subject to clearing, there is a major threat from the combined impact of introduced grasses and fire whereby increased fuel loads lead to increased mortality of adult stems and subsequent decline¹. Mortality in excess of 50% of adult stems per fire event has been recorded when subject to fuel loads of 20 t/ha. While adult stem mortality is substantial with these high intensity fire events, many plants resprout from the base. Despite this capacity to resprout, a frequency of intense fire in excess of around 1 in 5 years is predicted to result in long-term population decline. Fires commonly occur more frequently than 1 in 5 years throughout the range of *Cycas armstrongii* and the occurrence of intense fire is set to increase as exotic grasses spread rapidly across the landscape². The exotic pasture species, Gamba Grass *Andropogon gayanus*, supports fuel loads up to 20 t/ha³ and the exotic Perennial Mission Grass *Pennisetum polystachyon*, supports fuel loads up to 27 t/ha⁴, both far higher than the fuel loads of native

grasses. These exotic species have the potential to extend over the full range of *C. armstrongii*. Fire also reduces seed viability in *C. armstrongii*¹.

Conservation objectives and management

A management program for this species, and other cycads, has been established^{5,6}.

Reservation of high quality habitat, control of exotic grasses and fire management are priority management requirements. Promotion of the value of cycad habitat through the economic returns gained by the sustainable use of this species may assist conservation of the species. A monitoring program for this species has been established, and should be maintained.

References

- ¹ Liddle, D.T. 2004. *The ecology of Cycas armstrongii and management of fire in Australia's tropical savannas*. PhD, thesis (Charles Darwin University, Darwin.)
- ² Kean, L., and Price, O. 2003. The extent of Mission grasses and Gamba Grass in the Darwin region of Australia's Northern Territory. *Pacific Conservation Biology* **8**, 281-290.
- ³ Barrow, P. 1995. *The Ecology and Management of Gamba Grass (Andropogon gayanus Kunth.)*. Final Report to the Australian Nature Conservation Agency. (NT Department of Primary Industry and Fisheries, Darwin.)
- ⁴ 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.
- ⁵ Anon. 1997. *A Management Program for Cycads in the Northern Territory of Australia*. (Parks and Wildlife Commission of the Northern Territory, Darwin.)
- ⁶ Liddle, D.T. 2009. *Management Program for Cycads in the Northern Territory of Australia 2009-2014*. Northern Territory Department of Natural Resources, Environment, the Arts and Sport, Darwin.