

Threatened Species of the Northern Territory

DARWIN PALM

Ptychosperma macarthurii

Conservation status

Australia: Not listed

Northern Territory: Endangered



Photo: S. Taylor

Description

This species is a slender clumping, feather-leaved palm with a small crown supported on a narrow trunk 3 to 6 cm in diameter.

Flowering: May, Dec.

Fruiting: Aug, Sept, Nov, Dec.

Note

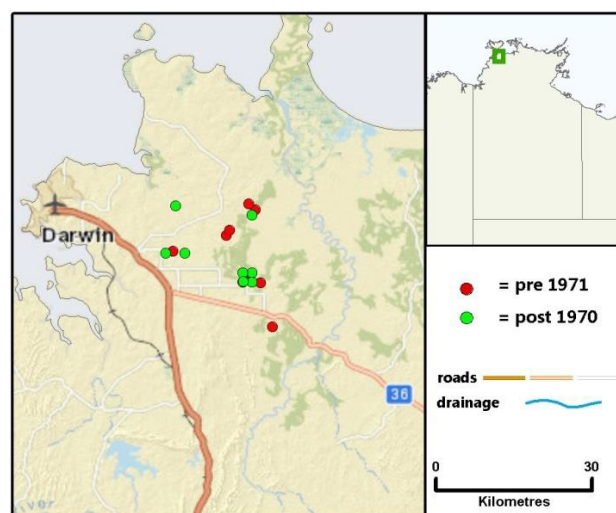
There has been some debate over the taxonomic status of this palm (Shapcott 1998). It was formerly considered as an NT endemic, *Ptychosperma bleeseri*. Here, we follow Dixon *et al.* (2003) and treat *P. bleeseri* as a synonym and isolated population of *P. macarthurii*, a species more widespread in Queensland. The NT entity will be treated under this latter name in the forthcoming revision in Flora of Australia (John Dowe *pers. comm.*).

Distribution

Ptychosperma macarthurii is known from the NT, Cape York Peninsula and Papua New Guinea. In the NT, this species is known from eight populations with an extent of occurrence of 200 km² (Duff *et al.* 1992; Barrow *et al.* 1993; Liddle *et al.* 1996). Within this area, it is restricted to wet rainforest patches and has an area of occupancy of less

than 1 km² (Anon 1998; Liddle *et al.* 2001). Population counts in 2000-01 revealed adult plants at seven locations, four of which had fewer than 20 and the smallest with only one adult plant. Of a total of 1037 adult plants, 70% occurred in one population at Crocodile Creek. These counts overstate the number of mature individuals as plants were classified as adults on the basis of size and thus may include individuals not capable of reproduction.

Conservation reserves where reported:
Black Jungle Conservation Reserve



Known locations of *Ptychosperma macarthurii*

Ecology

This species occurs in dense rainforests associated with lowland springs near the margins of riverine floodplains. The soils typically comprise deep organic clay loams without humus development. Within the rainforest patches the species will grow in a wide range of light conditions (Duff *et al.* 1992; Barrow *et al.* 1993; Liddle *et al.* 1996).

Conservation assessment

In the NT, this species is classified as **Endangered** (under criteria A4bce; B1ab(ii,iii,iv)+2ab(ii,iii,iv); C1) based on:

- the small number of mature individuals;
- severely fragmented populations; and
- a past observed and a projected future decline in population and quality of habitat.

Threatening processes

Fire and feral animals have been the primary threats impinging on the populations in the 1990s (Liddle *et al.* 1992ab, 1996, 2001, 2006). There was substantial mortality following wildfires at the Whitewood Road population in 1990 and 1993, and at Black Creek in 1992. In a 1990 survey, Whitewood Road contained 42% of the known adults, however this was reduced to 5% by 2000-2001. Re-survey of Bankers Jungle in 2003 showed significant impacts from grazing with the loss of juvenile and adult plants.

Disturbance from feral buffalo, cattle and pigs declined in the 1990s following on from the Brucellosis and Tuberculosis Eradication Campaign, and changes in land use and fencing of four of the eight populations. In the early 1990s, several populations exhibited a polarised size class structure typified by large adult and juvenile plants. In the absence of wildfire and in a period of reduced

disturbance by feral animals, sufficient small juvenile plants survived and grew to infill the intermediate classes.

In addition to the above, there are increasing threats from: changed fire regimes due to increased fuel loads from introduced grasses around rainforest margins;

- changed land use in the catchment that could lead to a reduction in the water supply to the springs on which the rainforests depend;
- changes in surface water quantity and quality;
- clearing proposals and any other action that could remove or damage individual rainforest patches that form an interconnected mosaic essential for the flow of genetic material; and
- hybridisation with introduced *Ptychosperma* species.

Conservation objectives and management

A Recovery Plan for this palm was developed in 2005 and is aimed at the long-term conservation of the species and its habitat. The Plan addresses recovery of the wild populations, community involvement and public education, land use planning, *ex-situ* conservation, research and monitoring (Liddle and Scott 2005).

Priority conservation actions include:

- i. protection of the habitat from introduced animals and fire in conjunction with ongoing monitoring to provide feedback on the population response; and
- ii. research into the water supply that maintains the spring-fed rainforests.

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