

Threatened species of the Northern Territory

Waddy-wood

Acacia peuce

Conservation status

Australia: Vulnerable

Environment Protection and Biodiversity Conservation Act 1999

Northern Territory: Endangered

Territory Parks and Wildlife Conservation Act 1976



Credit: D. Albrecht

Description

Acacia peuce is a long lived, tall tree to c. 15-18 m with short horizontal branches, pendulous branchlets and Sheoak-like phyllodes. The bark is grey-brown and fibrous, and the timber is very dense with dark red heart-wood. The pale yellow flowers are solitary and inconspicuous; and the distinctive pods are large (up to 5x20 cm), papery and flattened. The seeds are flat and large (6-14 mm long, 4-8.5 mm wide). They lack features to enhance dispersal, being dull, dark brown to black and lacking arils.

Flowering: Any time with rain.

Fruiting: Any time with rain.

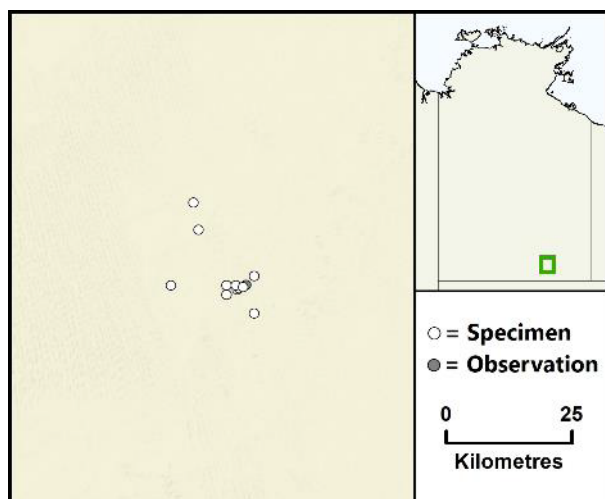


Credit: D. Albrecht

Distribution

Acacia peuce is known from three disjunct sites on the western and eastern edges of the Simpson Desert in arid inland Australia: Andado Station (230 km south-east of Alice Springs) in the Northern Territory (NT); and Birdsville and Boulia in Queensland¹. At Andado and Birdsville, *A. peuce* is associated with shallow sand aprons overlaying clayey and gibber slopes and plains. At Boulia, the species is associated with palaeochannels of the Hamilton and Georgina Rivers¹. The NT population is the smallest of the three, with an extent of occurrence of c. 337 km² (latitudinal range 22 km and longitudinal range 15 km). The area of occupancy is 3.3 km².

NT conservation reserves where reported: Mac Clark Conservation Reserve.



Caption: Known locations of Waddy-wood in the NT (nrmmaps.nt.gov.au)

Ecology and life-history

Seedling establishment in *A. peuce* is confined to extremely rare phases of prolonged, well above-average rainfall². The species does not maintain a persistent seed bank, and seed dispersal is highly localised³.

The NT population (including saplings and subadults) effectively doubled in size between 1980 and 2008 (23 per ha versus 52 per ha) due to the major recruitment event that took place 1979-1983 and to the subsequent high survival of juveniles, saplings and adults². However, the small fragment stands have comparatively low density and proportionately lower regeneration compared to the main stand: they are therefore potentially more vulnerable to decline². The adult (>5 m tall) population increased from 6.8 per ha in 1980 to 10.7 per ha in 2008².

Threatening processes

Climate change is a threat to *A. peuce* because it will likely lower recruitment success if large rainfall bouts become rarer⁴. Adult trees face a mortality risk from severe drought and hotter summers associated with climate change.

Fire is a plausible threat because *A. peuce* lacks a persistent seed bank and adults are unlikely to survive fire³. Portions of the NT population may periodically face a fire risk when ground fuel is

high. Usually though, the fire risk is negligible on the Andado Station gibber plains.

Past cattle browsing caused a bottle-neck in sapling growth². All NT stands are now fenced-off, however, the fencing arrangement with the landholder is non-binding. A resumption of cattle access would pose a threat to this species.

Other identified potential agents of adult mortality – lightning strike, past wood harvesting and parrot damage – have not strongly affected the demography or persistence of the NT population².

Conservation objectives and management

The national recovery plan for threatened arid zone acacias⁵ has expired and a Conservation Advice Document is being prepared. Trends in population size, demography, habitat condition and threats are monitored at Andado^{2,6}. Ecological research on reproductive biology, seed dormancy and germination cues, and soil seedbank dynamics has been undertaken³. Community and stakeholders engagement activities have taken place⁷. Indigenous ecological knowledge of this species has been documented⁶. *Acacia peuce* is extremely important to Southern *Arrente* people and they are involved in its conservation management⁸. The genetic relationships of the three populations have been investigated⁹.

References

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- ⁴ S. Raghu, Nano, C.E.M. and Pavey, C.R. 2013. A demographic framework for the adaptive management of

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⁶ Nano C., Nano T., Gibson J. and Pavey C. 2008. Recovery action implementation for threatened arid acacias: distribution, monitoring and Indigenous ecological knowledge of *A. peuce*, *A. undoolyana*, *A. pickardii* and *A. latzii*.

⁷ Nano, C. and Ward, S. 2013. Tracking the health of Waddy Wood (*Acacia peuce*) in the Northern Territory of Australia. Unpublished report, Northern Territory Government.

⁸ Land Rights News - Central Land Council (clc.org.au).
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⁹ Burdon, J. (2018) Population genetic diversity of *Acacia peuce* F.Muell., a rare Australian desert tree, from its three remaining populations. Unpublished Honours Thesis, Department of Ecology and Evolutionary Biology, School of Biological Sciences, Adelaide, South Australia.