Threatened species of the Northern Territory

Desert quandong

Santalum acuminatum

Conservation status

Australia: Not listed
Environment Protection and Biodiversity Conservation Act 1999

Northern Territory: Vulnerable
Territory Parks and Wildlife Conservation Act 1976

Description

Santalum acuminatum is a shrub or small tree 6-8 m tall, with rough grey-black bark. The branchlets are often pendulous[1,2]. The flowers are small (2-4 mm long), partly creamy-green and partly orange. The fruit is 1.5-2.6 cm in diameter and is a shiny bright red edible drupe. Like most species in the family Santalaceae, *S. acuminatum* is hemiparasitic, extracting xylem sap from host plant roots[3]. The species can form clonal stands via root suckering and stands may therefore comprise very few individuals. The fruit is highly prized by Aboriginal people and the species is under commercial production.

Flowering: September-January

Fruiting: All months except April, but mainly August-October

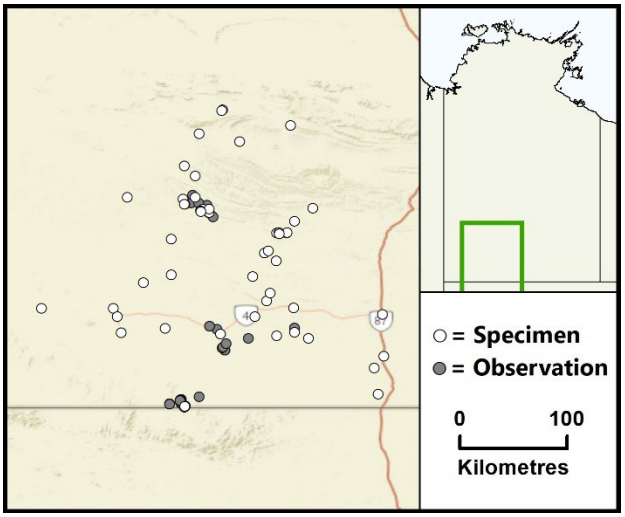
Distribution

This species occurs in all Australian mainland states[1,2] and the Northern Territory (NT) population represents the northernmost extent its range. In the NT, Desert Quandong occurs west and south-west of Alice Springs.

Credit: D. Albrecht

It has a latitudinal extent of 279 km and a longitudinal extent of 228 km. One of the largest occurrences is at Watarrka National Park, while other significant stands occur on pastoral properties and on Aboriginal lands. The population at Uluru- Kata Tjuta National Park is small, but of high cultural significance.

NT conservation reserves where reported: Watarrka National Park and Uluru-Kata Tjuta National Park



Caption: Known locations of the Desert Quandong in the NT (nrmaps.nt.gov.au)

Ecology and life-history

Quandong occurs in dune swales, along creeks, and on plains, low rises hills, typically on sandy or loamy soils. Under cultivation, seedlings take at least four years to bear fruit – time to maturation in the wild may depend on site conditions[4].

Population fire response varies among sites and according to fire intensity and frequency[4]. In general though, the species can withstand fire by resprouting epicormically (low intensity fire) or basally (hotter fire). Basal resprouts can produce fruit again within eight years of fire[4].

Seedlings are rare in the wild, though this species is relatively easy to propagate under nursery conditions[4]. The Emu (itself of conservation concern) is believed to be the principle seed vector in the NT.

Threatening processes

Heavy camel browsing is a serious threat to this species. It can result in plant death or reduced fruit crop size. Browsing of resprouts after fire can be especially detrimental[4].

Coupled with other threats, climate change could lead to a significant range contraction in this species. Reduced winter rainfall could result in lower seedling recruitment given that this species requires germination under cooler temperatures[4]. Frequent and hotter drought and fire are significant threats due to the elevated risk of adult mortality[4].

Buffel grass invasion is a significant threat because it increases site fuel loads, it outcompetes seedlings and host plants, and it attracts horses, cattle and camels which damage stands[4].

Low genetic variability in small, isolated stands may result in reproductive failure[5]. Wood harvesting for artefact carving is a past threat but the practice is now strongly discouraged and the impact is low.

Conservation objectives and management

An integrated conservation management plan exists for the NT population[4]. The management actions are: map stands throughout south-west NT, monitor selected stands and document changes in population health and habitat quality, collate cultural knowledge about Quandong for future generations, investigate genetic diversity within NT populations and genetic relationships with neighbouring state populations and undertake ex situ conservation and translocation planning.

References

[1] George, A.S. 1981. Santalaceae. In: *Flora of Central Australia.* (ed. J.Jessop) pp. 25-26. (Reed Books, Sydney.)

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[3] Tennakoon, K.U., Pate, J.S. and Arthur, D.A. 1997. Ecophysiological aspects of the woody root hemiparasite Santalum acuminatum (R. Br.) A. DC and its common hosts in south Western Australia. *Annals of Botany* 80, 245-256.

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[5] Warbuton, C.L., James, E.A., Fripp,Y.J., Trueman, S.J. and Wallace, H.M. 2000 Clonality and sexual reproductive failure in remnant populations of *Santalum lanceolatum* (Santalaceae). *Biological Conservation* 96, 45-54.