



SECURING THE FUTURE PROJECT

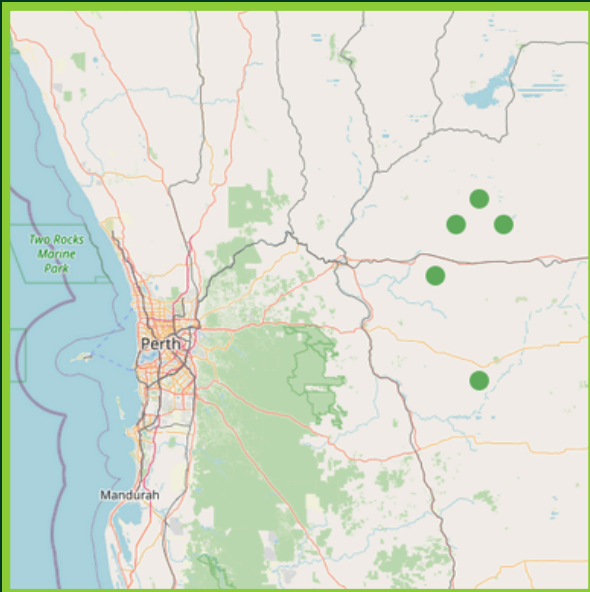
Preventing extinction of 10 threatened plants from SA, Vic & WA through seed collecting, germination trials, research, propagation & translocations

An initiative of the



Australian
Seed Bank
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SPECIES PROFILE

ACACIA VOLUBILIS

This wiry and dome-shaped compact shrub grows up to 40cm high, with ridged branches which are often twisted. Lacking true leaves, it instead has small leaf-like phyllodes, which are widely spaced apart. It has typical wattle flowers that are bright yellow and globular. After flowering it develops curved reddish brown pods containing cone-shaped seeds. While the species is long lived, seed production from wild populations has been historically low.

Tangle Wattle is found only in a small area of WA's wheatbelt, in roadside reserves, on private property with one population in a nature reserve. It prefers gravelly sandy or sandy clay soil and association with casuarinas and hakeas in a low growing shrubland community.

KEY FACTS

Common name: Tangle Wattle

Conservation status: Endangered (EPBC),
Critically Endangered (WA)

Historical notes: First formally described by Baron Ferdinand von Mueller in 1877. Considered extinct until rediscovery in 1996

Flowering season: June - July

Lifespan: Perennial - long lived

This profile was produced in collaboration with **Plant Conservation Australia** (formerly the ANPC)



Acacia volubilis flowers
(Image: Andrew Crawford)



THREATENING PROCESSES

Much of the remaining populations of the Tangle Wattle occur along road verges. As such threats include road maintenance activities, weed invasion, and habitat degradation. Grazing by introduced and native herbivores, small population size, changed fire regimes and broader land degradation also pose risks to the species' survival.

To mitigate these threats, landowners have been informed of the species' presence and their legal responsibilities, populations have been signposted, and seed collection and translocation commenced.

PROJECT OUTCOMES

The **Securing the Future Project** supported the Western Australian Seed Centre, Kensington (DBCA) to undertake a suite of conservation activities for this species. More than 3,100 germplasm units (seed and cuttings) were collected from across all known populations. This enabled seed to be banked for long term conservation; a genetic analysis study to be completed for all populations; and the creation of a Seed Production Area.

While plants grown from cuttings struggled with poor health, a major breakthrough came with the development of a successful tissue culture protocol. Scientists generated callus tissue from cuttings that developed into new plants through a process called somatic embryogenesis. Building on this, they also developed a cryopreservation protocol using droplet vitrification in liquid nitrogen. Over 80% of the frozen callus survived thawing, offering long-term security for this species beyond the limits of traditional seed banking. Living material from eight individuals is now preserved indefinitely, with additional work continuing to expand this cryopreservation collection as an additional insurance policy for this imperilled species

REFERENCES

- Images: *Acacia volubilis* flower (Andrew Crawford), Seed (Andrew Crawford), Flowering plant (Andrew Crawford), Tissue culture plants (Bryn Funnekotter).
- <https://bie.ala.org.au/species/https://id.biodiversity.org.au/node/apni/2905924>
- <https://www.dcceew.gov.au/environment/biodiversity/threatened/action-plan/priority-plants/tangled-wattle>
- <https://www.dcceew.gov.au/sites/default/files/documents/volubilis.pdf>



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+61 (0) 2 6250 9473 @SeedPartnership

SeedPartnership.org.au @AustralianSeedBankPartnership

Coordinator@seedpartnership.org.au @AustralianSeedBankPartnership



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