

THREATENED SPECIES SCIENTIFIC COMMITTEE

Established under the *Environment Protection and Biodiversity Conservation Act 1999*

The Minister's delegate approved this Conservation Advice on 16/12/2016.

Conservation Advice

Acacia porcata

Conservation Status

Acacia porcata is listed as Endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) effective from the 16 July 2000. The species was eligible for listing under the EPBC Act at that time as, immediately prior to the commencement of the EPBC Act, it was listed as Endangered under Schedule 1 of the preceding Act the *Endangered Species Protection Act 1992* (Cwlth).

Species can also be listed as threatened under state and territory legislation. For information on the listing status of this species under relevant state or territory legislation, see <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>

The main factors impacting on the species that are considered to be the cause for its eligibility for listing in the Endangered category are its restricted extent of occurrence and small number of individuals.

Description

Acacia porcata is a sprawling shrub growing to less than 5 m tall. Branchlets are cylindrical in cross section, resinous and covered in dense, stiff, white hairs 1 - 1.5 mm long, becoming greyish. Phyllodes (enlarged part of the leaf stalk taking the form of a leaf) are more or less cylindrical in shape (5 – 30 mm long by 0.5 mm in diameter), tapered at the base and end abruptly at a short straight or slightly incurved tip (0.25mm long). Flower heads are ball-shaped and contain 35 - 40 yellow flowers on 10 – 20 mm long, sticky stalks, usually much longer than the phyllodes. Seed pods are flat, sticky, lacking a stalk and measure 11 - 27 mm long by 5-6mm across. They have a ridge on the external surface that is along the middle, above the seeds. The pods contain 1 - 4 seeds arranged lengthways. Seeds are black, shiny and slightly sticky with a slight ridge on the side. Seeds measure 5 mm long by 3.5 mm wide by 1.5 mm thick. The fleshy outer seed covering is white.

Distribution

Acacia porcata has been recorded only from a small area in the Mundubbera Shire in the Burnett district of south-east Queensland. The type locality at Beeron Holding, also known as Rocky Paddock, is the only known occurrence of *A. porcata*. It is situated 46 km SSW of Gayndah and 45 km south-east of Mundubbera in the Parish of Beeron, County of Newcastle in the Bigalow Belt South bioregion of Queensland (Leverington 2001).

In 2000 the tenure of the land was a grazing homestead perpetual lease with the Department of Natural Resources controlling the timber rights (Leverinton 2001). The lease was used primarily for cattle (*Bos indicus*) grazing but in the past has been logged selectively for a number of eucalypt species (Leverinton 2001). The rough topography and the unsuitability of the vegetation on the steep slopes as feed for grazing animals have limited the amount of disturbance of this area. Freehold pastoral holdings adjacent to the lease have been cleared selectively and are used primarily for cattle grazing (Leverinton 2001).

Nine populations of *A. porcata* are known over 6 km within Beeron Holding (Leverinton 2001). In August 1998, 1172 plants of *A. porcata* were counted (Leverinton 2001). In 2013 the land tenure

was identified as being part of the Beeron National Park in the Department of National Parks, Recreation, Sport and Racing's Beeron National Park Management Satetment (NPRSP 2013).

Relevant Biology/Ecology

The area in which *A. porcata* occurs is characterised by steep hills and V-shaped valleys with extensive rock outcrops. The hills range between 400 to 548 metres and local relief ranges from 80 to 180 m (Leverington 2001). Toondahra granite is the principal rock of these hills. The soils are shallow, coarse, textured, loamy sands, weakly acidic and dark due to high organic content (Leverington 2001). *Acacia porcata* flowers August to late September with fruits forming in November and December (Leverington 2001).

The terrain in Beeron National Park has extensive areas of rock outcrop and the vegetation is variable in density and structure (Leverington 2001). Vegetation is predominantly open forest or open woodland with an open to sparse shrub layer. In the upper stratum *Eucalyptus exserta* (peppermint eucalyptus), *Eucalyptus petalophylla* (Bloodwood) and *Eucalyptus dura* codominate with *Acacia grandifolia*, *Allocasuarina inophloia* (stringybark she-oak) and *Callitris endlicheri* (black Cypress pine) occasionally occurring. The understorey is diverse in composition and structure. Much of the area is dominated by *Triodia pungens* (gummy spinifex). Other frequent species are *Leptospermum polygalifolium* (Tantoon), *Xanthorrhoea johnsonii* (forest grasstree), *Acacia eremophiloides*, *Cleistochloa rigida*, and *Pomax umbellate* (Leverington 2001).

Leverington (2001) using field observations suspected that fire killed *A. porcata* shrubs with no regeneration from root or stem or shoots. The fire history for the area at the time for the observations were made was unknown (Leverington 2001). However one site had been burnt in 1996 with no germination observed at the time of observation in 2001 (Leverington 2001).

Threats

Acacia porcata is known to occur in the Beeron National Park. The threats listed in the table below relate to fire management within the Beeron National Park.

Table 1 – Threats impacting the *Acacia porcata* in approximate order of severity of risk, based on available evidence.

Threat factor	Threat type and status	Evidence base
Fire		
Too frequent burning	suspected current	High frequency fires during key points in the life cycle damage or kill <i>A.porcata</i> . Frequent fire may diminish the soil seedbank, prevent suckers developing and prevent seed set. Fires the burn too frequently may kill mature individuals and kill juveniles that have not had an opportunity to mature and therefore further deplete the soil seedbank.
Long intervals between fires	suspected current	Conversely, long intervals between fires maybe also detrimental to <i>A. porcata</i> . Long absences of fire reduce the opportunity of seed recruitment.
Invasive species		
Invasive weeds	potential	Invasive weeds may be a potential threat to <i>A. porcata</i> , invasive grasses, may prevent recruitment and canopy weeds may compete with <i>A. porcata</i> .

Conservation Actions

Conservation and Management priorities

Fire

- Fires must be managed to ensure that prevailing fire regimes do not disrupt the life cycle of *A. procata*, that they support rather than degrade the habitat necessary to *A. procata*, that they do not promote invasion of exotic species.
- Physical damage to the habitat and individuals of *A. procata* must be avoided during and after fire operations.
- Avoid successive fire intervals that are shorter than the period required to maintain recovery capacity of resprouting individuals.
- Provide maps of known occurrences to local and state Rural Fire Services and seek inclusion of mitigation measures in bush fire risk management plan/s, risk register and/or operation maps.

Invasive species

- Identify and remove new weeds in the Beeron National Park area that could become a threat to the *A. procata* using appropriate methods for controlling the density of weeds. Consider the possible disturbance/overspray threats associated with control methods.

Stakeholder Engagement

- Fire management authorities and land management agencies should use suitable maps and install field markers to avoid damage to the *A. procata*.
- Land managers should be given information about managing fire for the benefit of the *A. procata*.
- Determine objectives for any public engagement e.g. to improve management on private land, to ensure recent scientific knowledge is incorporated into park management.

Seed collection, propagation and other ex-situ recovery action

- Ex situ seed banks provide an important capacity for medium to long-term storage of diaspores of threatened plant species. Where storable diaspores (seeds, spores, dispersal units) are available seed banking should be undertaken in consultation with relevant seed storage professional advice as to appropriate conditions (collection and post-harvest treatment; pre-storage drying; storage temperature; curation and auditing) to ensure diaspore viability is retained.
- Seed should be appropriately sourced and stored in a seed bank facility using best practice seed storage guidelines and procedures to maximise seed viability and germinability.
- Seed should be collected from all known populations.

Survey and Monitoring priorities

- Monitor the progress of recovery as result of implementation of recovery programs, including the effectiveness of management actions and the need to adapt them if necessary.

- Monitor the size and structure and reproductive status of populations at different stages in the fire cycle, taking opportunities to monitor after planned and unplanned fires (where they occur) and improve understanding of the fire response of the species.
- Undertake survey work in suitable habitat and potential habitat to locate any additional occurrences and to more precisely assess population size and distribution.
- Precise fire history records must be kept for the habitat and extant populations (confirmed and suspected) of *A. procata*.

Information and research priorities

- Investigate options for linking, enhancing or establishing additional populations.
- Improve understanding of the mechanisms of response to different fire regimes and identify appropriate fire regimes for conservation of *A. procata* by undertaking appropriately designed experiments in the field and/or laboratory.
- Where appropriate, use understanding and research on fire responses among related (e.g. congeneric) or functionally similar species to develop fire management strategies for conservation.
- Identify optimal fire regimes for regeneration (vegetative regrowth and/or seed germination), and response to other prevailing fire regimes.

References cited in the advice

Leverington, A. (2001). Recovery plan for *Acacia porcata* 1999-2001. Report to Environment Australia, Canberra. Queensland Parks and Wildlife Service, Brisbane

Other sources cited in the advice

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<https://environment.ehp.qld.gov.au/report-request/species-list/>

NPRSP (2013) Department of National Parks, Recreation, Sport and Racing's Berron National Park Management Statement. Beerong Park Management statement, Queensland Government.

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<http://www.nprsr.qld.gov.au/managing/plans-strategies/statements/beerong.html>