

# Draft Flora and Fauna Guarantee Action Statement

---

## Prickly Tree-fern *Cyathea leichhardtiana*

### Description

Prickly Tree-fern (*Cyathea leichhardtiana*) is a tall slender tree-fern which grows to 7 m tall with a trunk to 12 cm in diameter. It has a small crown relative to its height. Characteristic features are the very dark green fronds and the slender trunk covered in dull brown persistent frond bases (or stipes) with sharp spines. The tiny red-brown flat scales on the ultimate rachises and midveins of the leaflets are very fine, pale and silky. Although they are distinctive a microscope is needed to accurately identify them. The sori (clusters of spores), which occur on the underside of the fronds, are small and do not have an obvious partial case or insidium (Duncan & Isaac 1986). Wakefield (1975) comments that the spines on the low fronds of young plants will readily tear clothing that brushes against them.

Prickly Tree-fern is superficially similar to Slender Tree-fern (*C. cunninghamii*). However, the later has a trunk which is relatively even more slender, a crown that is lighter green and frond bases are almost black and have much smaller spines.

### Distribution

Prickly Tree-fern grows from eastern Victoria through eastern NSW to central coastal Queensland. In Victoria, there are about 33 recorded sites, all from east Gippsland. Most records are from east of Cann River. The main concentrations of records are from Mt Drummer (Alfred National Park), the lower Wingan River and the Howe Range (both in Croajingolong National Park). The species is also recorded from the Double Creek catchment near Mallacoota, the Jones Creek rainforest in Coopracambra National Park and MacKenzie River near Club Terrace. Two outlying populations (and the most westerly) occur at Fairy Dell and Mt Little Dick, near Bruthen. All the Victorian sites are in foothill forest in the East Gippsland Uplands and East Gippsland Lowlands bioregions. Where they occur, the species can be quite common.

### Habitat

Prickly Tree-fern grows in Warm Temperate Rainforest. It is found on the slopes within the rainforest rather than on wet creek banks (Wakefield 1975).

### Life history and ecology

Little has been published on the specific life history and ecology of the Prickly Tree-fern. Other *Cyathea* species regenerate from spores rather than by vegetative means. Members of the genus *Cyathea* do not generally grow from transplanting trunks unless a large rootball is included. Rough Tree-fern (*Cyathea australis*) is sensitive to physical disturbance and can be severely depleted by disturbance associated with timber harvesting unless special protective measures are implemented (Ough & Murphy 2004). Prickly Tree-fern, like Slender Tree-fern, is tall with a slender trunk and is vulnerable to windthrow if exposed. It appears to be dependent on moist sheltered sites which rarely suffer fires. It appears to tolerate low intensity fires (Gullan *et al.* 1984) but a population at Jones Creek was apparently destroyed by a high intensity fire in 1983 (Chesterfield *et al.* 1990). Prickly Tree-ferns are slow growing so that a 7 m tall individual is likely to be very old.

### Conservation status

#### Victorian conservation status

The Prickly Tree-fern has been listed as “threatened” under the *Flora and Fauna Guarantee Act 1988*.

The Prickly Tree-fern is considered “vulnerable” in Victoria according to DSE’s *Advisory List of Rare or Threatened Plants in Victoria - 2005* (DSE 2005).

### Threats

The major threat likely to affect existing Prickly Tree-fern sites in Victoria is high intensity wildfire. Minor threats with the potential to damage or degrade a small number of sites are mechanical habitat disturbance and weed invasion.

<i>Standard threat</i>	<i>Source Of Threat</i>	<i>Explanation</i>
Inappropriate fire regimes.	High fire intensity.	High intensity fire appears to kill Prickly Tree-ferns.

### Important populations

<i>Location name</i>	<i>Land manager</i>	<i>Catchment</i>	<i>Bioregion</i>
Fairy Dell Flora Reserve	Parks Victoria	East Gippsland	East Gippsland Lowlands East Gippsland Uplands
Alfred National Park	Parks Victoria	East Gippsland	East Gippsland Lowlands East Gippsland Uplands
Croajingolong National Park	Parks Victoria	East Gippsland	East Gippsland Lowlands East Gippsland Uplands
East Gippsland Forest Management Area	DSE Statewide Services - Gippsland	East Gippsland	East Gippsland Lowlands East Gippsland Uplands

### Past management actions

<i>Action</i>	<i>Explanation</i>
Implement Land Conservation Council land use recommendations.	The Land Conservation Council recommendation to create Fairy Dell Flora Reserve has been implemented.
Establish Management Areas or Special Protection Zones.	Known Prickly Tree-fern sites in State Forest outside the reserve system have been placed in Special Protection Zones.

### Conservation objectives

#### Long term objective

To ensure that the Prickly Tree-fern can survive, flourish and retain its potential for evolutionary development in the wild.

#### Objectives of this Action Statement

- To secure populations or habitat from potentially incompatible land use or catastrophic loss.
- To increase knowledge of biology, ecology or management requirements.

### Intended management actions

*The intended management actions listed below are further elaborated in DSE's Actions for Biodiversity Conservation (ABC) system. Detailed information about the actions and locations, including priorities, is held in this system and will be provided annually to land managers and other authorities.*

<i>Standard objective</i>	<i>Targets</i>	
To secure populations or habitat from potentially incompatible land use or catastrophic loss.	<ul style="list-style-type: none"> <li>• All known Prickly Tree-fern populations are protected from mechanical disturbance.</li> <li>• The risk of severe fire to all known Prickly Tree-fern populations is minimised.</li> </ul>	
<i>Action</i>	<i>Details</i>	<i>Responsible agents</i>
Establish Management Areas or Special Protection Zones.	Prickly Tree-fern populations occurring outside the reserve system will be protected within a 40 m radius exclusion zone. Timber harvesting and associated road construction will be excluded from this zone. Where existing roads or tracks occur within 40 m of populations, maintenance works will be managed to minimise impacts on the Prickly Tree-fern.	DSE Statewide Services – Gippsland region
Protect habitat from fire.	Prickly Tree-ferns are vulnerable to high intensity fire and it is preferable that all fire is excluded from Prickly tree-fern sites.	DSE Statewide Services –

	This objective is consistent with the general fire management objective for its habitat, Warm Temperate Rainforest Ecological Vegetation Class, which is also fire sensitive. Plan and conduct fuel reduction burning in such a way that the chance of high intensity wildfire entering Prickly Tree-fern habitat is minimised.	Gippsland region
--	---	------------------

<i>Standard objective</i>	<i>Targets</i>	
To increase knowledge of biology, ecology or management requirements.	<ul style="list-style-type: none"> <li>Surveys conducted in prospective habitat to attempt to locate additional Prickly Tree-fern populations to inform planning processes, especially for fire and timber harvesting management.</li> </ul>	
<i>Action</i>	<i>Details</i>	<i>Responsible agents</i>
Conduct survey to locate additional populations.	Conduct survey to further clarify the distribution and abundance of the species and thus its status.	DSE Biodiversity & Ecosystem Services

## References

- Chesterfield, E.A., Taylor, S.J. & Molnar, C.D. (1990) Recovery after Wildfire: Warm Temperate Rainforest at Jones Creek. *Arthur Rylah Institute for Environmental Research Technical Report Series No 101*. Department of Conservation, Forest and Lands, Victoria.
- DSE 2005 *Advisory List of Rare or Threatened Plants in Victoria - 2005*. Department of Sustainability and Environment: Victoria, Australia.
- Duncan, B.D. & Isaac, G. (1986). *Ferns and Allied Plants of Victoria, Tasmania and South Australia*. Melbourne University Press, Carlton and Monash University, Clayton.
- Gullan, P.K., Parkes, D.M., Walsh, N.G. & Barley, R.H. (1984). *Fire and Sites of Botanical Significance in East Gippsland*. National Herbarium of Victoria, Melbourne.
- Ough, K. & Murphy, A. (2004). Decline in tree-fern abundance after clearfell harvesting. *Forest Ecology and Management* **199**: 153-163.
- Wakefield N. A. (1975) *Ferns of Victoria and Tasmania*. Field Naturalists Club of Victoria, Melbourne.