

**Report: Threatened Species Detection & Rainforest Investigation**  
**Within Vicforest Logging Coupes: 832-502-0010, 832-502-0011 & 832-502-0019.**

FFGA Threatened Flora Species:

*Cyathea cunninghamii* (Slender Tree-fern).

VROT Rare Flora Species

*Cyathea marcescens* (Skirted Tree-fern)

Range Extension for VROT Rare Flora Species

*Lastreopsis hispida* (Bristly Shield-fern)

Rare Ecological Vegetation Class:

East Gippsland Foothills Warm Temperate Rainforest EVC 32.

**Cabbage Tree Creek Forest Block, East Gippsland**

**Abstract:**

Sections within and adjacent to Vicforests clear-fell logging coupes 832-502-0010, 832-502-0011 & 832-502-0019 were investigated to identify the presence of rainforest & rare or threatened flora species and other biodiversity conservation values. Rare or threatened flora species presence was documented and species location details and photographic records were obtained.

This investigation identified the presence of *Cyathea cunninghamii* (Slender Tree-fern) & rare hybrid species *Cyathea marcescens* (Skirted Tree-fern) within and adjacent to boundaries of each of the three Vicforests clear-fell logging coupes 832-502-0010, 832-502-0011 & 832-502-0019. Rare and protected plant community Warm Temperate Rainforest (EVC32) was encountered along each of the three gully systems explored. An extremely rare fern *Lastreopsis hispida* (Bristly Shield-fern) of which these records would add weight to a range extension for species, was discovered in one gully system along eastern boundary of coupe 832-52-0019.

Vicforests and the department (DELWP) has failed to identify protected plant species *Cyathea cunninghamii* (Slender Tree-fern) upon roading activities or within coupe reconnaissance. VicForests have failed to survey or identify this protected flora species before commencing logging operations. VicForests have not complied with their obligations to conserve significant ecological values, including through application of the precautionary principle and implementation of mandatory management actions relevant to the potential population extent of rare and threatened species identified in the areas detailed within this report.

Recommendations are made to the Department of Environment, Land, Water and Planning (DELWP) to pursue the requirements of the precautionary principle and the need to apply appropriate management zones within the study location and ensure that rare and threatened species throughout State Forest areas are not affected by the impact of Vicforests logging operations.

**Relevant Legislation:**

"Management Standards and Procedures for timber harvesting operations in Victoria's State forests, 2014" (MSP's)

"Planning Standards for timber harvesting operations in Victoria's State forests 2014" (Planing Standards)

"Code of Practice for Timber Production 2014" (Code)

"East Gippsland Regional Forest Agreement" (RFA)

"East Gippsland Forest Management Plan" (FMP)

"Flora and Fauna Guarantee Act 1988" (FFGA)

**Status of Site:**

Vicforests Logging Coupe 832-502-0011 is currently active, coupes 832-5020010 & 832-502-0019 are currently on approved Vicforests TRP Scheduled.

Investigation Report by: Goongerah Environment Centre (GECO).

Surveyors: Owen Hanson Tiff. Tarrant

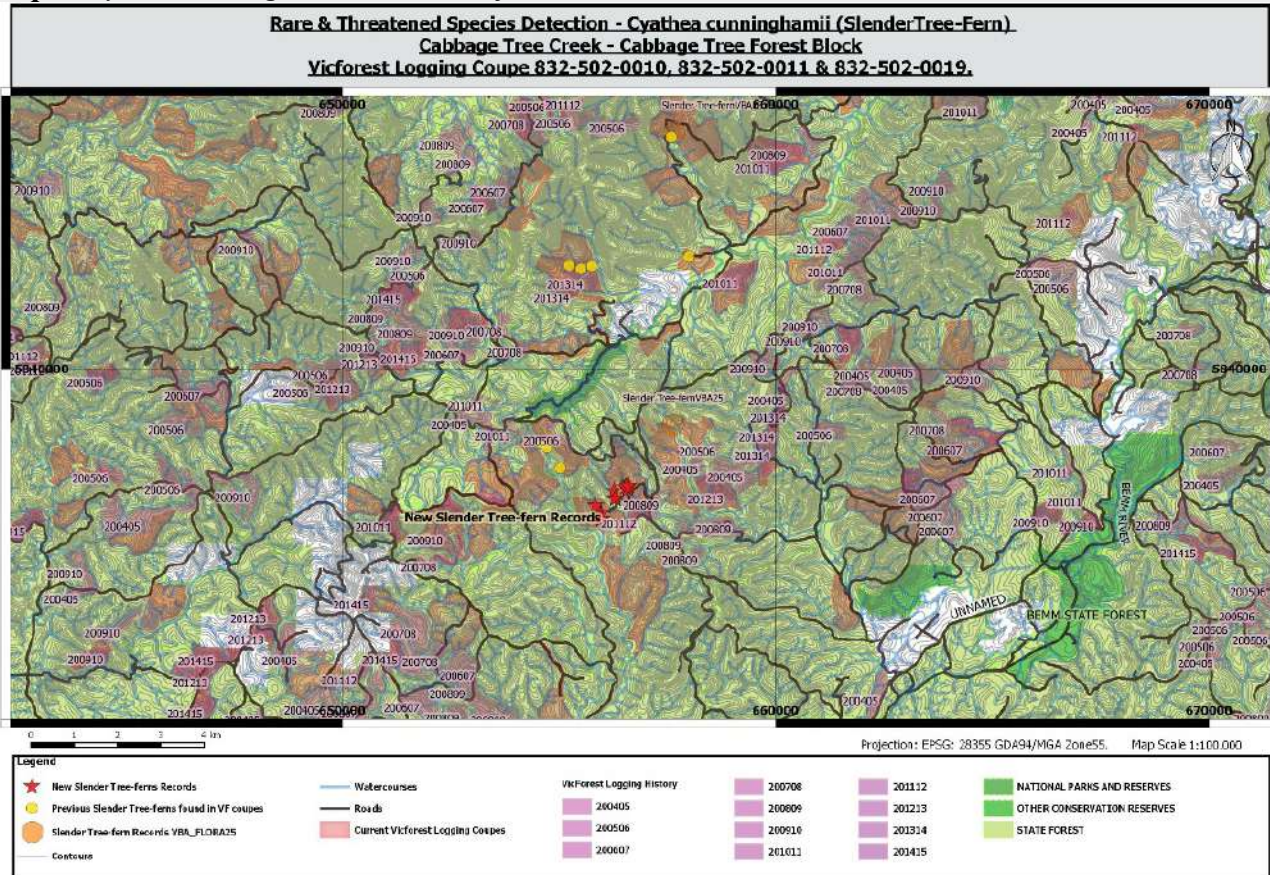
Assessment by: Owen Hanson

Author: Owen Hanson

## Location Details:

Area of concern is within and adjacent to Vicforests logging coupes 832-502-0010, 832-502-0011 & 832-502-0019, north of Cabbage Tree Creek Township off of Blair Rd within the Cabbage Tree Creek catchment, East Gippsland.

### Map 1. *Cyathea cunninghamii* Slender Tree-fern records within area.



## Investigation Report & Threatened Species Detections

### Aim: To Determine The Presence Of Rare / Threatened Species & Communities.

The purpose of this investigation was to determine the presence of rare or threatened flora species & Communities, including Warm Temperate Rainforest (EVC32), *Cyathea x marcescens* Skirted Tree-fern and FFGA listed species *Cyathea cunninghamii* Slender Tree-fern, within and adjacent to Vicforests clear-fell logging coupes **832-502-0010, 832-502-0011 & 832-502-0019.**

Both the hybrid *Cyathea x marcescens* & the parent genus *Cyathea cunninghamii* were found in close proximity to active & planned Vicforests logging operations, along with surrounding Warm Temperate Rainforest. A VROT listed rare plant *Lastreopsis hispida* (Bristly Shield-fern) was discovered and is now one of 2 locations known for the species in the region.

### Method:

Date of investigation: 10/11/2018 – 11/11/2018

### Site Assessments: (walking throughout forested areas within and adjacent to coupes).

Site visits were conducted into various areas within and adjacent to Vicforests logging coupes **832-502-0010, 832-502-0011 & 832-502-0019**, exploring the rainforest margins for rare and threatened flora. Rare or threatened flora species presence was documented and the species location details and photographic records were obtained.

### Results:

1. Threatened Species Detection *Cyathea x marcescens* & *Cyathea cunninghamii* Photographed Individuals & Identification Features, & Displayed Location. See: Map 2 & 3.
2. Range Extension Rare Species *Lastreopsis hispida* Photographed Individuals & Identification Features, & Displayed Location. See: Map 3.
3. Assessment of Identified Values & Actions Required for Their Protection. See: Map 2 & 3.
4. Conclusions & Recommendations See Page 14.



**Results 1. Photographed Individuals & Identification Features Slender Tree-fern *Cyathea cunninghamii* & Skirted Tree-fern *Cyathea marcescens*.**

On the 10<sup>th</sup> & 11<sup>th</sup> of November 2018 individuals of *Cyathea cunninghamii* & *Cyathea x marcescens* (identified in Map.2) were encountered within areas of rainforest along the tributary bordering the three Vicforests logging coupes **832-502-0010, 832-502-0011 & 832-502-0019**. The individuals shown below (*Cyathea cunninghamii*) were the individuals identifiable in appearance, with aid of identification features such as fronds & scales that were mostly accessible. Further records of individuals yet to be identified are displayed on map 2.

**Vicforests logging coupe 832-502-0010**

Within the gully system along the western boundary of coupe 832-502-0010, locations 01, 02, 03 & 04 containing Slender Tree-fern *Cyathea cunninghamii* have been recorded and displayed as orange circles on map 2. Other *Cyathea cunninghamii* individuals are displayed as red stars. Photographed individuals, identification features and locations have been provided for locations 01, 02, 03 & 04. See below.

**Location 01 *Cyathea cunninghamii* 55 H 656311 5837019 UTM GDA94**



*Slender Tree-fern Cyathea cunninghamii*



*Scales of Cyathea cunninghamii*



*Cyathea cunninghamii Location*

**Location 02 *Cyathea cunninghamii* 55 H 656305 5837019 UTM GDA94**



*Slender Tree-fern Cyathea cunninghamii*



*Trunk of Cyathea cunninghamii*



*Cyathea cunninghamii Location*



**Results 1. Photographed Individuals & Identification Features Slender Tree-fern *Cyathea cunninghamii* continued (832-502-0011)**

Location 03 *Cyathea cunninghamii* 55 H 656300 5837081 UTM GDA94



*Slender Tree-fern Cyathea cunninghamii*



*Trunk of Cyathea cunninghamii*



*Cyathea cunninghamii* Location

Location 04 *Cyathea cunninghamii* 55 H 656269 5837191 UTM GDA94



*Slender Tree-fern Cyathea cunninghamii*



*Trunk of Cyathea cunninghamii*



*Cyathea cunninghamii* Location



Overlooking rainforest gully on Northwest boundary of coupe 832-502-0011



**Results 1. Photographed Individuals & Identification Features Slender Tree-fern *Cyathea cunninghamii* continued. (832-502-0010 & 832-502-0011)**

VicForests logging coupes 832-502-0010 & 832-502-0011

Within the gully system between coupe boundaries 832-502-0010 & 832-502-0011, locations 05, 06, 07 & 08 containing Slender Tree-fern *Cyathea cunninghamii* have been recorded and displayed as orange circles on map 2. Other *Cyathea cunninghamii* individuals are displayed as red stars. Photographed individuals & identification Features and locations have been provided for locations 05, 06 & 07. See below.

Location 05 *Cyathea cunninghamii* 55 H 656594 5837302 UTM GDA94



*Slender Tree-fern Cyathea cunninghamii*



*Trunk of Cyathea cunninghamii*



*Cyathea cunninghamii* Location

Location 06 *Cyathea cunninghamii* 55 H 656608 5837305 UTM GDA94



*Trunk of Tree-fern Cyathea cunninghamii*



*Scales of Cyathea cunninghamii*



**Results 1. Photographed Individuals & Identification Features Slender Tree-fern *Cyathea cunninghamii* continued (832-502-0010 & 832-502-0011)**



*Slender Tree-fern Cyathea cunninghamii*



*Cyathea cunninghamii* Location

**Location 07 *Cyathea cunninghamii* 55 H 656574 5837268 UTM GDA94**



*Slender Tree-fern Cyathea cunninghamii*



*Cyathea cunninghamii* Location



Roading (coupe driveway) along rainforest on eastern boundary of VF 832-502-0019



**Results 1. Photographed Individuals & Identification Features Slender Tree-fern *Cyathea cunninghamii* continued (832-502-0019)**

VicForest Logging coupe 832-502-0019

Within the gully system on the eastern boundary of coupe 832-502-0019, locations 01, 02, 03, 04 & 05 containing Slender Tree-fern *Cyathea cunninghamii* have been recorded and displayed as orange circles on map 3. Other *Cyathea cunninghamii* individuals are displayed as red stars. Photographed individuals, identification features and locations have been provided for locations 01, 02, 03, 04 & 05. See below. Three individuals (*Cyathea cunninghamii* & *Cyathea marcescens*) at location 01 were not more than a few meters from the edge of new roading (coupe driveway) where the road crosses the main rainforest gully. These tree-ferns are in sight of road and readily identifiable in appearance, with identification features accessible such as scales. See photo below

Location 01 *Cyathea cunninghamii* 55 H 655787 5836867 UTM GDA94



Skirted Tree-fern *Cyathea marcescens*



Slender Tree-fern *Cyathea cunninghamii*



Skirted Tree-fern *Cyathea marcescens*



Location 01. Roading up against threatened tree-ferns  
(Left) *Cyathea marcescens* (Middle) *Cyathea cunninghamii* (Right) *Cyathea marcescens*



**Results 1. Photographed Individuals & Identification Features Slender Tree-fern *Cyathea cunninghamii* continued (832-502-0019)**

Location 02 *Cyathea cunninghamii* 55 H 655837 5836854 UTM GDA94



*Young Slender Tree-fern Cyathea cunninghamii*

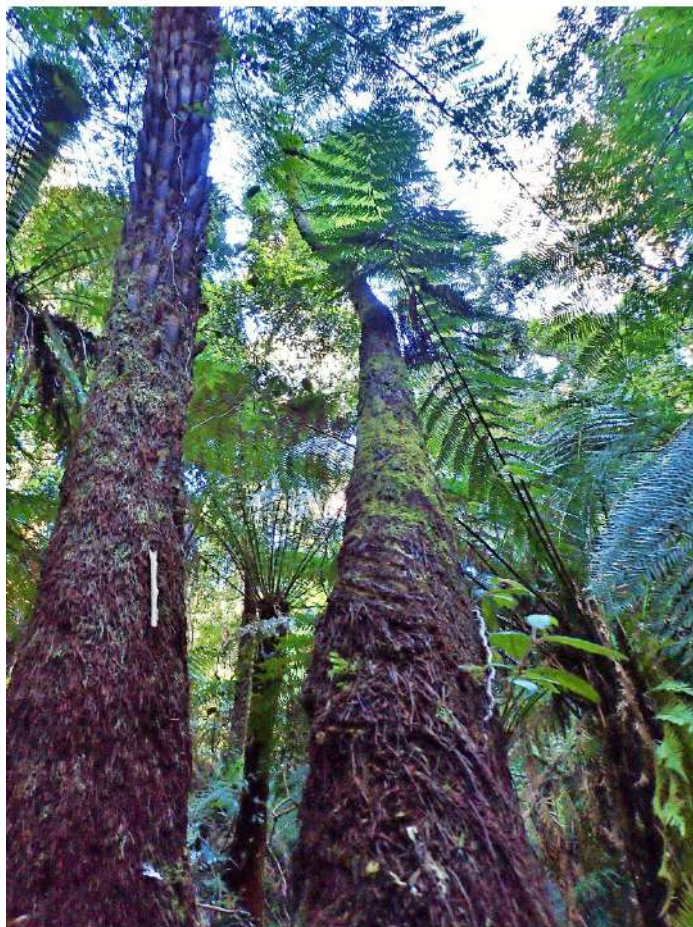


*Scales of Cyathea cunninghamii*



*Cyathea cunninghamii* Location

Location 03 *Cyathea cunninghamii* 55 H 655973 5836681 UTM GDA94



*Trunk of Cyathea cunninghamii*



*Slender Tree-fern Cyathea cunninghamii*



*Cyathea cunninghamii* Location



**Results 1. Photographed Individuals & Identification Features Slender Tree-fern *Cyathea cunninghamii* continued (832-502-0019)**

Location 04 *Cyathea cunninghamii* 55 H 655968 5836661 UTM GDA94



*Slender Tree-fern Cyathea cunninghamii*



*Scales of Cyathea cunninghamii*

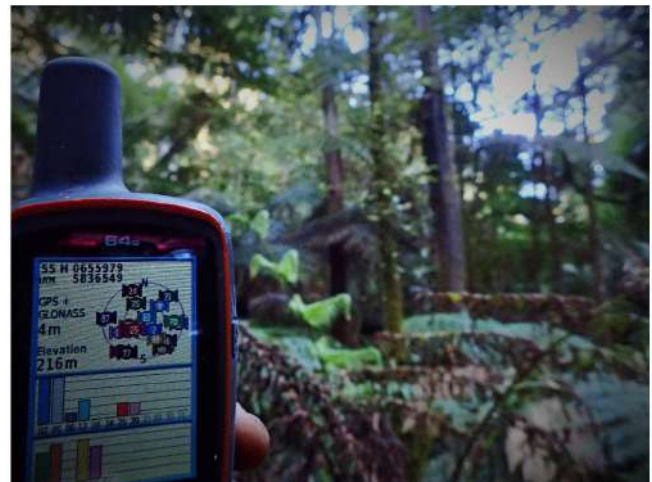


*Trunk of Cyathea cunninghamii*

Location 05 *Cyathea cunninghamii* 55 H 655968 5836661 UTM GDA94



*Slender Tree-fern Cyathea cunninghamii*



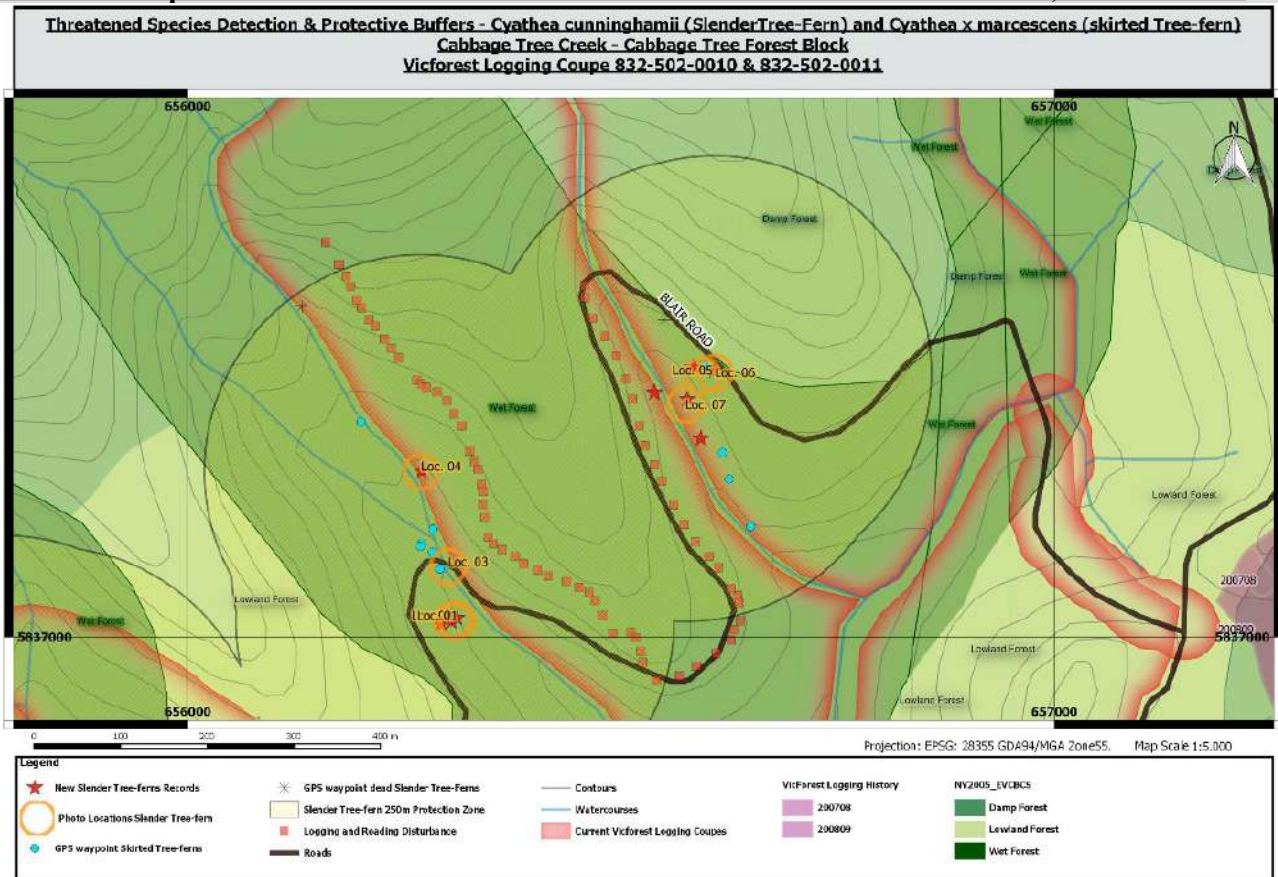
*Cyathea cunninghamii* Location



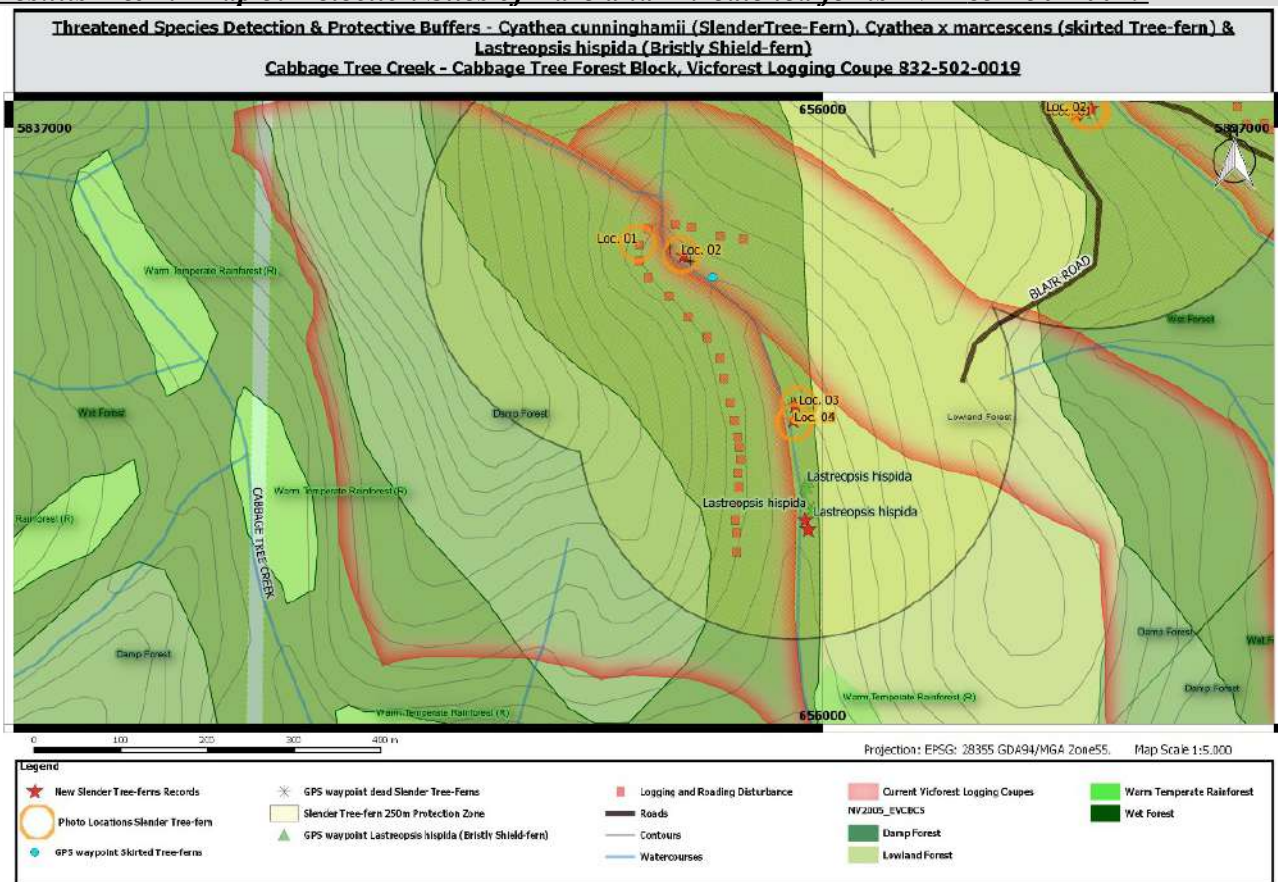
Rainforest along gully on eastern boundary of coupe 832-502-0019



**Results 1. Map 2. Detection Sites of Rare and Threatened ferns -VF 832-502-0010, 832-502-0011**



**Results 1 & 2. Map 3. Detection Sites of Rare and Threatened ferns - VF 832-502-0019**





**Results 2. Photographed Individuals & Identification Features *Lastreopsis hispida* (Bristly Shield-fern) (VF 832-502-0019)**

On the 10<sup>th</sup> of November 2018 a small population of *Lastreopsis hispida* was incidentally discovered within a area of rainforest along the gully on the eastern boundary Vicforests logging coupe 832-502-0019. The individuals shown below of Bristly Shield-fern *Lastreopsis hispida* were identifiable in appearance, with identification features such fronds & scales. Further records of individuals found are displayed on map 3. See above.

Bristly Shield-fern *Lastreopsis hispida* location 55 H 655990 5836563 UTM GDA94



*Habit Lastreopsis hispida*



*Scales of Lastreopsis hispida*



*Spores of Lastreopsis hispida*



*Clump Lastreopsis hispida*



*Fronde Lastreopsis hispida*



*Location of Lastreopsis hispida*



*Stipe Lastreopsis hispida*



*Close-up Lastreopsis hispida*



## **Results 2. Legislative Prescriptions associated with protected species *Cyathea cunninghamii***

From: “Code of Practice for Timber Production 2014, Department of Environment and Primary Industries, The State of Victoria, 2014”

### **Mandatory Actions**

#### **Addressing biodiversity conservation risks considering scientific knowledge**

2.2.2.2 The **precautionary principle** must be applied to the conservation of biodiversity values. The application of the precautionary principle will be consistent with relevant monitoring and research that has improved the understanding of the effects of forest management on forest ecology and conservation values.

**‘precautionary principle’ means when contemplating decisions that will affect the environment, careful evaluation of management options be undertaken to wherever practical avoid serious or irreversible damage to the environment; and to properly assess the risk-weighted consequences of various options. When dealing with threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.**

From: “Planning Standards for timber harvesting operations in Victoria’s State forests 2014, Appendix 5 to the Management Standards and Procedures for timber harvesting operations in Victoria’s State forests 2014”

### **4.5 Flora – detection based zoning**

#### **4.5.2 East Gippsland FMA**

4.5.2.1 Include all verified populations of species regarded as threatened at a State or national level in the SPZ or SMZ.

4.5.2.2 Include substantial representative populations of species that are rare in Victoria, and poorly known, have few records or are at the edge of their range in East Gippsland in the SPZ or SMZ.

4.5.2.3 Wherever practicable include populations in larger parts of the SPZ or SMZ in combination with other values.

**Table 5 Detection based FMZ rules for flora.**

<b>FMA</b>	<b>Common name</b>	<b>Scientific name</b>	<b>Zoning management actions</b>	<b>Management actions</b>	<b>Review</b>
East Gippsland	(Slender Tree-fern)	<i>Cyathea cunninghamii</i>	<b>Establish a SMZ of 250m radius over verified populations.</b>	<b>Conduct a site inspection and detailed planning in consultation with DEPI to ensure the species is adequately protected during timber harvesting operations.</b>	

From: “East Gippsland Regional Forest Agreement (RFA) 1996”.

#### **Attachment 1. Comprehensive Adequate Representative (CAR) Reserve System**

The (CAR) Reserve System has the following three components as described by the JANIS Reserve Criteria:

i. Values Protected by Prescription. This comprises those elements of the SPZ protected by regional prescriptions, including stream buffers and all remaining rainforest and heathland vegetation together with a surrounding buffer.

#### **Attachment 2. Threatened Flora, Fauna & Communities**

Both parties recognise the range of mechanisms in place to conserve the habitat of rare and threatened flora and fauna in East Gippsland. These include protection within Dedicated Reserves and the Special Protection Zone (SPZ) or Special Management Zone (SMZ) in State forest, protection of key habitats such as rainforest, heathlands, and rare or threatened Ecological Vegetation Classes (EVC) under the Forest Management Plan, and the development of Action Statements or Recovery Plans for species listed under the *Endangered Species Protection Act 1991* and the *Flora and Fauna Guarantee Act 1988*.



### Results 3. Assessment of identified values and the actions required for their protection. Map 2 & 3.

#### Records and past occurrences of *Cyathea cunninghamii* within proximity the VicForests logging coupes:

- Records of protected flora species *Cyathea cunninghamii* contained on VBA\_25 dataset are within 2km of current active coupe. Other more recent records within proximity to logging coupes have been submitted to VicForests & the department DELWP over past years. These records occurred within the local region, some of which records are ~1km away from the current active VicForests coupe. VicForests logging coupe 832-502-0017 in 2016, 830-508-0008 in 2016, 830-504-0023 in 2016, 827-515-0006 & 827-513-0017 in 2016, 830-510-0006 & 830-509-0004 in 2014 were all coupes reported on by the public, where the presence of protected species *Cyathea cunninghamii* was detected and not given appropriate protection.

#### Distribution and habitat protection of rare and threatened flora

- Areas of rainforest within and surrounding VicForests logging coupes 832-502-0010, 832-502-0011 & 832-502-0019 contained rare & threatened rainforest obligate fern species *Cyathea marcescens*, *Cyathea cunninghamii* and *Lastreopsis hispida* (Bristly Shield-fern). These rainforest areas containing such species did not all fall within the modelled rainforest from spacial data "NV2005\_EVCBCS", nor did all rainforest areas always constitute Vicforests' narrow definition of rainforest "based only on structural overstorey configuration of a select few canopy species" for Warm Temperature Rainforest (EVC32). This included areas subject to past logging disturbance (~1980's) that had significantly damaged rainforest stands. Other situations where environmental conditions were not presently suitable to consist of a continuous closed canopy of mature rainforest canopy species, such as Tree-fern dominated gullies or pockets of which host the protected *Cyathea* species *marcescens* & *cunninghamii* and other rainforest obligate flora species, other examples were bed rock tributaries, and a small rocky waterfall.

#### Disturbance and population health

- The population of *Cyathea cunninghamii* (Slender Tree-fern) & hybrid species *Cyathea x marcescens* (skirted Tree-fern) was present throughout the catchment that was explored. Though many dead Slender Tree-ferns individuals were encountered within the three gully system bordering the three coupes, at these locations and throughout the gullies past logging disturbance was evident. Such damage as falling trees into gully, cutting and rolling of logs into gully, and logging within rainforest and margins resulting in exposure for micro-climates and stimulation of eucalypt regrowth.

#### Required actions for protection

- As the exact locations and distribution of the protected flora species *Cyathea cunninghamii* is certainly not sufficiently known, nor is the habitat adequately represented in spacial datasets or recognised in the field by Vicforests, the protection of this species must be established by use of the regional prescription. This includes mechanisms such as precautionary protection measures covering the species habitat throughout these areas, together with a surrounding vegetative buffered area suitable for maintaining the micro-climatic conditions of sensitive ecosystems and plant communities, and are excluded from the impacts of logging operations including regeneration burns.



## **Conclusions & Recommendations**

- The “Planning Standards for timber harvesting operations in Victoria’s State forests 2014, Appendix 5 to the Management Standards and Procedures for timber harvesting operations in Victoria’s State forests 2014” (section 4.5.2.1) requires that all verified populations of *Cyathea cunninghamii* (Slender Tree-fern) be “[included ]in the SPZ or SMZ”. Further, these “Planning Standards” require that on detection of verified *Cyathea cunninghamii* (Slender Tree-fern) records, an SMZ of 250m radius must be established over each population.
- The failure of both Vicforests and DELWP to detect and adaptively manage for these significant conservation values in an appropriate way constitutes a serious breach of planning and operational obligations to abide by the 'precautionary principle' as mandated in the *Code of Practice for Timber Production 2014* and to adhere to section 4.5.2.1 of the “Planning Standards for timber harvesting operations in Victoria’s State forests 2014, Appendix 5 to the Management Standards and Procedures for timber harvesting operations in Victoria’s State forests 2014”.
- As a regulator of operations within Victoria's State Forests DELWP must ensure Vicforests abides by these mandatory principles and prescriptions including by applying the minimum buffers zones as displayed in Maps 2 & 3 for the *Cyathea cunninghamii* (Slender Tree-fern) locations displayed and any others found within 250m of Vicforests scheduled logging coupes.

### Immediate Action to be taken.

- DELWP must restrain Vicforests from logging in the area of these *Cyathea cunninghamii* (Slender Tree-fern) records including areas within & adjacent to coupes 832-502-0010, 832-502-0011 & 832-502-0019 where it is likely the species is present, and protection of additional surrounding buffered areas.
- A thorough search for the presence of and evaluation of the extent and population health of *Cyathea cunninghamii* (Slender Tree-fern) must be undertaken within any further areas where Vicforests intends to log and the species presence is possible.

### Recommended protection measures

- All records of *Cyathea cunninghamii* (Slender Tree-fern) must be placed in a Special Protection Zone of 100m-250m radius buffer of which logging is excluded, and afford the same protection to all further surrounding habitat in that location where the species is recorded. When Species locations are situated along a watercourse or gully system, that watercourse or gully system must be buffered by a minimum 100m vegetated buffer for a 1km throughout the entirety of suitable habitat in that catchment.
- These protection measures must be applied as both a precautionary measure for the current situation for undiscovered or yet to be identified individuals, and as adequate and representative protection of the continued existence of the species now and in the long term.

### Recommended Compliance action

- Vicforests has failed to abide by planning & management procedures to sufficiently recognise and protect ecological & biodiversity values from potential impacts of logging operations.
- Vicforests' track-record of poor practice for adequate protection and recognition of rainforest and significant flora is exacerbated by their limited view of their responsibility to conduct adequate and thorough surveys in order to first identify and then protect threatened species from effects of logging. A narrow current working definition of rainforest, of which Warm Temperature Rainforest in East Gippsland consists of an assessment based on a structural overstorey assemblage of nine species, two of which are rare in East Gippsland. This approach and continued practice is not an adequate assessment approach, or acceptable in relation to recognition & protection of rainforest and associated obligate significant flora taxa.
- The department should look at avenues for the prosecution of VicForests on a coupe by coupe basis and prosecution on the basis of systemic failures such as has been reported on in this report.