

Report: Threatened Species Detection & Rainforest Investigation

Within Vicforest Logging Coupes: 832-513-0017.

Edge of Range population for VROT Rare Flora Species

Nematolepis squamea subsp. Squamea (Satinwood)

FFGA Threatened Flora Species:

Cyathea cunninghamii (Slender Tree-fern).

VROT Rare Flora Species

Cyathea marcescens (Skirted Tree-fern).

Rare Ecological Vegetation Class:

East Gippsland Foothills Warm Temperate Rainforest EVC 32.

Mt Buck Rainforest Site Of Significance (RSOS) EG42.

Curlip Forest Block, East Gippsland

Abstract:

Sections within and adjacent to Vicforests clear-fell logging coupe 832-513-0017 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.

- An extremely rare (only population in EG-FMA) long lived understory tree species *Nematolepis squamea subsp. Squamea* (Satinwood) was encountered along slopes of southern and northern boundary. These sites host the only reliable known records of *Nematolepis squamea subsp. Squamea* (Satinwood) within the East Gippsland FMA, & 1 of only 4 substantial populations occurring across the Victoria. This area was affected by 2014 bushfire and killed most (>90%) of the mature population, as most plants are less than 5 years old and the population has not yet sufficiently recovered; this population is at a critically vulnerable stage with most individuals at a Juvenile stage (<1m), and seed store and seed viability are unknown. Logging operations in this area are not suitable

In the process of drafting a SMZ for this population of *Nematolepis squamea subsp. Squamea* (Satinwood), studies MUST be conducted on population viability through seed viability, ground store and resilience/success of individuals against environmental ISSUES ie. DEER&other.

- This investigation identified the presence of *Cyathea cunninghamii* (Slender Tree-fern) or rare hybrid species *Cyathea marcescens* (Skirted Tree-fern) within and adjacent to boundary Vicforests clear-fell logging coupes 832-513-0017.
- Rare and protected plant community Warm Temperate Rainforest (EVC32) was encountered along each of the two gully systems explored. Rainforest site of significance EG42, has suffered impacts from the 2014 bushfire and rainforest areas are currently recovering. The areas are not suitable for timber harvesting operations. Rainforest was encountered along the gullies and lower slope of within and adjacent to coupe 827-513-0017, areas of rainforest require 60m buffer within zones Priority 1&2 in Mt Buck RSOS EG42.

Recommendations are made to the Department of Environment, Land, Water and Planning (DELWP) to pursue requirements to take precautionary measures and immediate actions need to: apply appropriate management zones within the location and ensure that rare and threatened species throughout this area 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 827-513-0017 is currently active.

Investigation Report by: Goongerah Environment Centre (GECO).

Surveyors: Owen Hanson

Assessment by: Owen Hanson

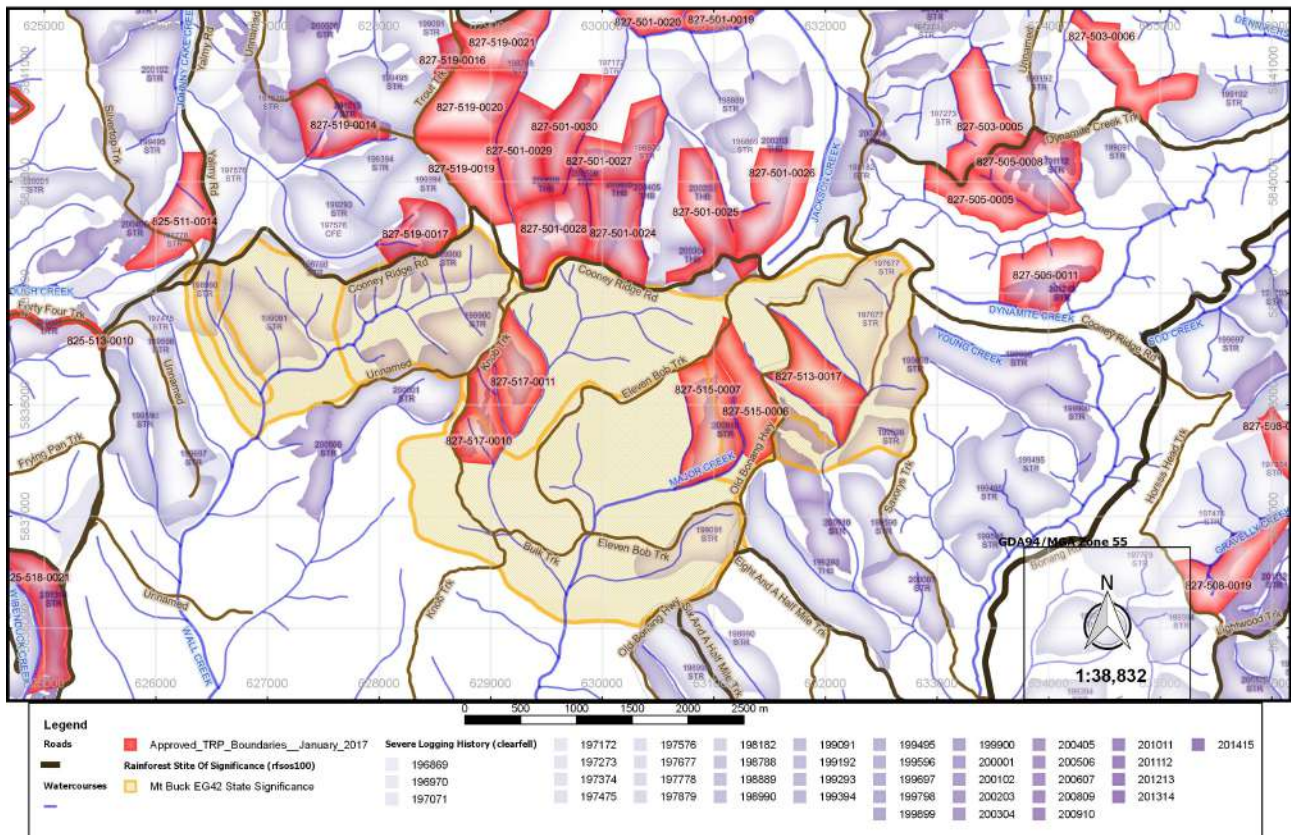
Author: Owen Hanson

Location Details:

Area of concern is within and adjacent to Vicforests logging coupe 827-513-0017 north of Orbost Township along Old Bonang Hwy. This area is within the Youngs Creek catchment, Curlip forest block, East Gippsland.

Map 1.

Mt Buck Rainforest Site Of Significance (EG42) VicForest Logging Coupe 827-513-0017.



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, *Cyathea cunninghamii* Slender Tree-fern and *Nematolepis squamea subsp. Squamea* (Satinwood) within and adjacent to Vicforests clear-fell logging coupe 827-513-0017.

VROT listed flora taxa *Cyathea x marcescens* & the parent genus *Cyathea cunninghamii* and *Nematolepis squamea subsp. Squamea* (Satinwood) were found within and in close proximity to active & planned Vicforests logging operations. Warm Temperate Rainforest was encountered within and adjacent to VicForest logging cope 827-513-0017

Method: Date of investigation: 11/09/2019 – 22/09/2019

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

Site visits were conducted into various areas within and adjacent to Vicforests logging coupe 827-513-0017, exploring the slopes and 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. Edge of Range population Rare Species *Nematolepis squamea subsp. Squamea* (Satinwood) Photographed Individuals & Identification Features, & Displayed Location. See: Map 2.
2. Threatened Species Detection *Cyathea x marcescens* / *Cyathea cunninghamii* Photographed Individual & Identification Features, & Displayed Location. See: Map 3
3. Assessment of Warm Temperate Rainforest. See: Map 4
4. Assessment of Identified Values & Actions Required for Their Protection. See Page 9 & Maps 2, 3 & 4.
5. Conclusions & Recommendations See Page 11.

Results 1. Photographed Individuals & Identification Features *Nematolepis squamea* subsp. *Squamea* (Satinwood) VF 827-513-0017

From the 11th – 22nd of September 2019, a population of *Nematolepis squamea* subsp. *Squamea* (Satinwood) was encountered in areas along lopes within and surrounding Vicforests logging coupe 827-513-0017. The individuals shown below of within and surrounding were identifiable in appearance. Records of individuals found are displayed on map 2.

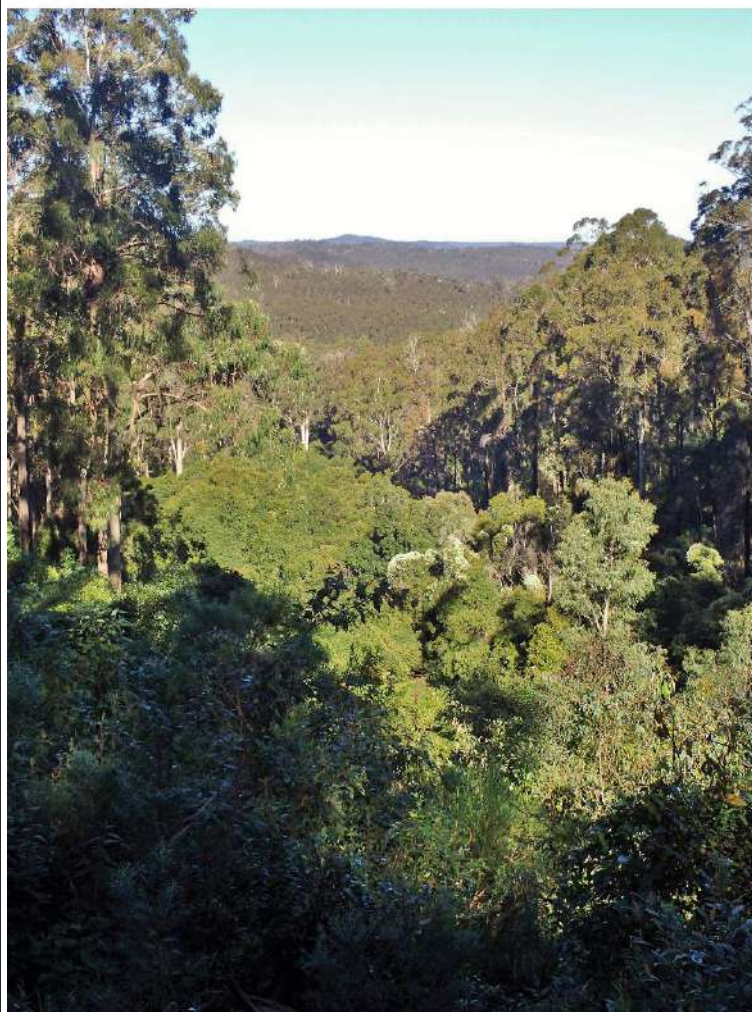
Nematolepis squamea subsp. *Squamea* (Satinwood) Individuals.



Results 1. (continued) - Individuals Identified *Nematolepis squamea* subsp. *Squamea* (Satinwood) VF 827-513-0017.

Locations of *Nematolepis squamea* subsp. *Squamea* (Satinwood) Individuals.

ID	lat	lon	ID	lat	lon	ID	lat	lon
1	-37.59593502	148.495708	15	-37.588282	148.49241701	29	-37.59570602	148.495219
2	-37.59587198	148.49573096	16	-37.58831201	148.49242296	30	-37.59618304	148.49580397
3	-37.59584198	148.49574002	17	-37.58862499	148.49203798	31	-37.59605303	148.49580598
4	-37.59558499	148.49575804	18	-37.59552003	148.49580296	32	-37.59571399	148.49509897
5	-37.59556898	148.49586801	19	-37.59551902	148.49578301	33	-37.58854997	148.49273703
6	-37.59607097	148.49519603	20	-37.59546404	148.49565997	34	-37.58864502	148.49275396
7	-37.59608103	148.49523199	21	-37.59545297	148.49566299	35	-37.59603904	148.49528798
8	-37.59614398	148.49522998	22	-37.59508199	148.49607999	36	-37.58772402	148.49256897
9	-37.59615202	148.49523903	23	-37.595487	148.49568	37	-37.59584701	148.49510299
10	-37.59618002	148.49520802	24	-37.59557602	148.49557204	38	-37.58777197	148.49261298
11	-37.58871803	148.49271004	25	-37.59551098	148.49554002	39	-37.58823004	148.49253302
12	-37.58875198	148.49266796	26	-37.59552397	148.495694	40	-37.59615202	148.49534397
13	-37.58801001	148.49263703	27	-37.59553897	148.49580598	41	-37.59576302	148.49509603
14	-37.58825501	148.49253201	28	-37.59573603	148.49554304			



Overview of rainforest gully bordering to coupe 827-513-0017

Results 2. Photographed Individual & Identification Features Slender Tree-fern *Cyathea cunninghamii* / Skirted Tree-fern *Cyathea marcescens*. VF-827-513-0017

On the 11th – 22nd of September 2019, one *Cyathea* individual of *Cyathea cunninghamii* or *Cyathea marcescens*, was observed along the southern boundriy of VicForest logging coupe 827-513-0017 (displayed on map 2 . The individual shown below was identifiable in appearance, (with aid of identification features such as frond scales) to be either *Cyathea cunninghamii* or *Cyathea marcescens*. The tree-fern individual at its current state of growth (quite young, trunk <1m tall) and the current lack of spores produced made was not currently feasible to differentiate from one or the other.

- Further records of individuals yet to be identified are displayed on map 2



Results 1 & 2 Maps. Detection Sites of Rare and Threatened Flora Species - VF 827-513-0017

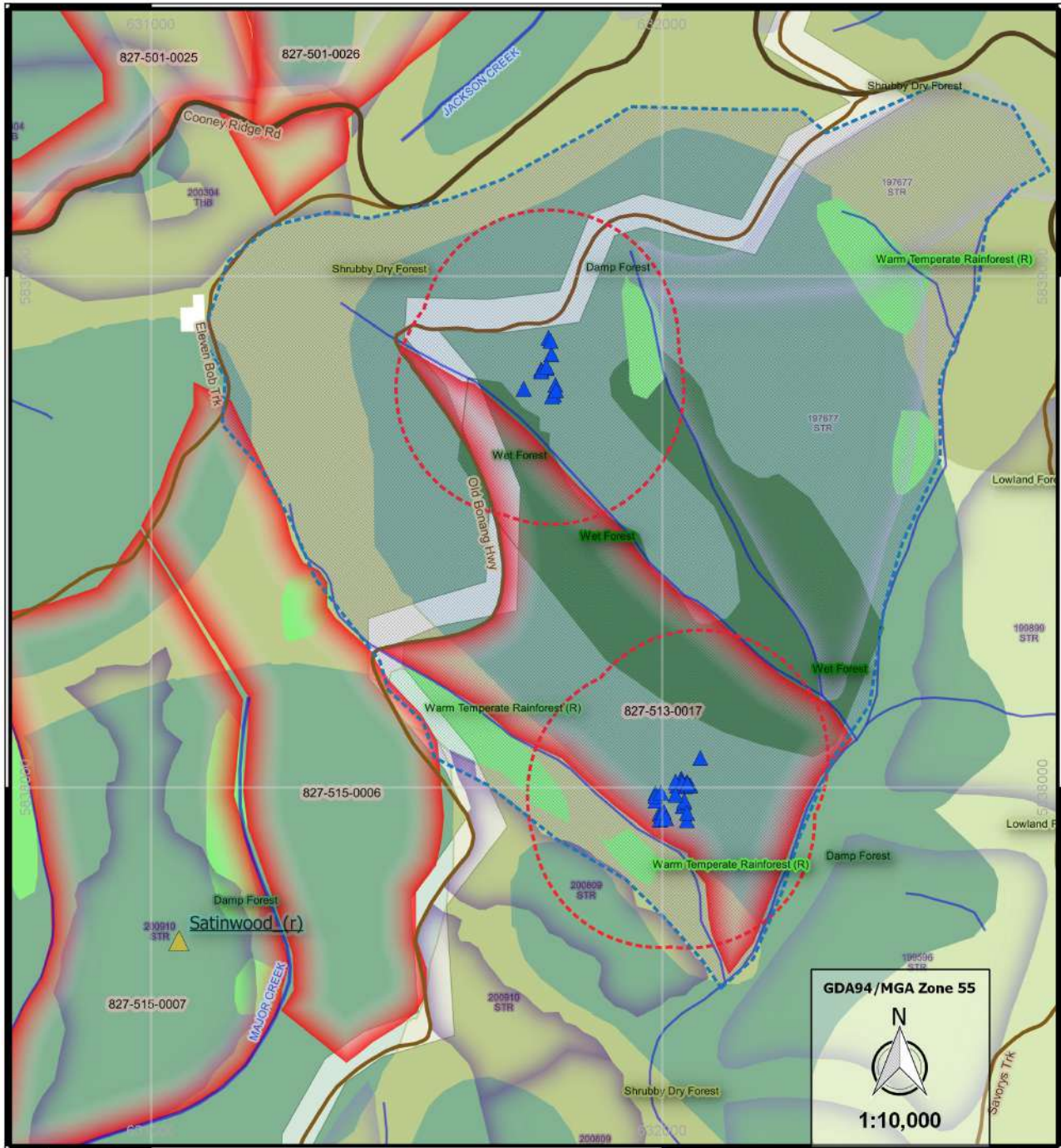
Within and adjacent to coupe 827-513-0017, locations, containing *Nematolepis squamea* subsp. *Squamea* (Satinwood) individuals are displayed as (Blue Triangle) on Map 2 & unverified *Cyathea* species has been recorded and displayed as an (Red Stars) on map 3.

Results 3. Assessment of Warm Temperate Rainforest and recommended protection.

From the 11th – 22nd of September 2019, during the course of the investigation, rainforest encountered was observed to be continuous throughout the gully systems in the area, and contiguous with CODE constitution & provisions. Including portions of rainforest severely damaged in 2014 bushfire that were at a regenerating stage. Rainforet areas assessed were conducted both inspections in the field and use mapping of aerial imagery & aid of data sets, (i.e.) Vegetation & fire modelling sets (NV-2005 & LastBurn). See Map 4.

Results 1. Map 2.

**Mt Buck - VicForest Logging Coupe 827-513-0017
Rare & Threatened Flora Species
Nematolepis squamea subsp. *Squamea* (Satinwood)**

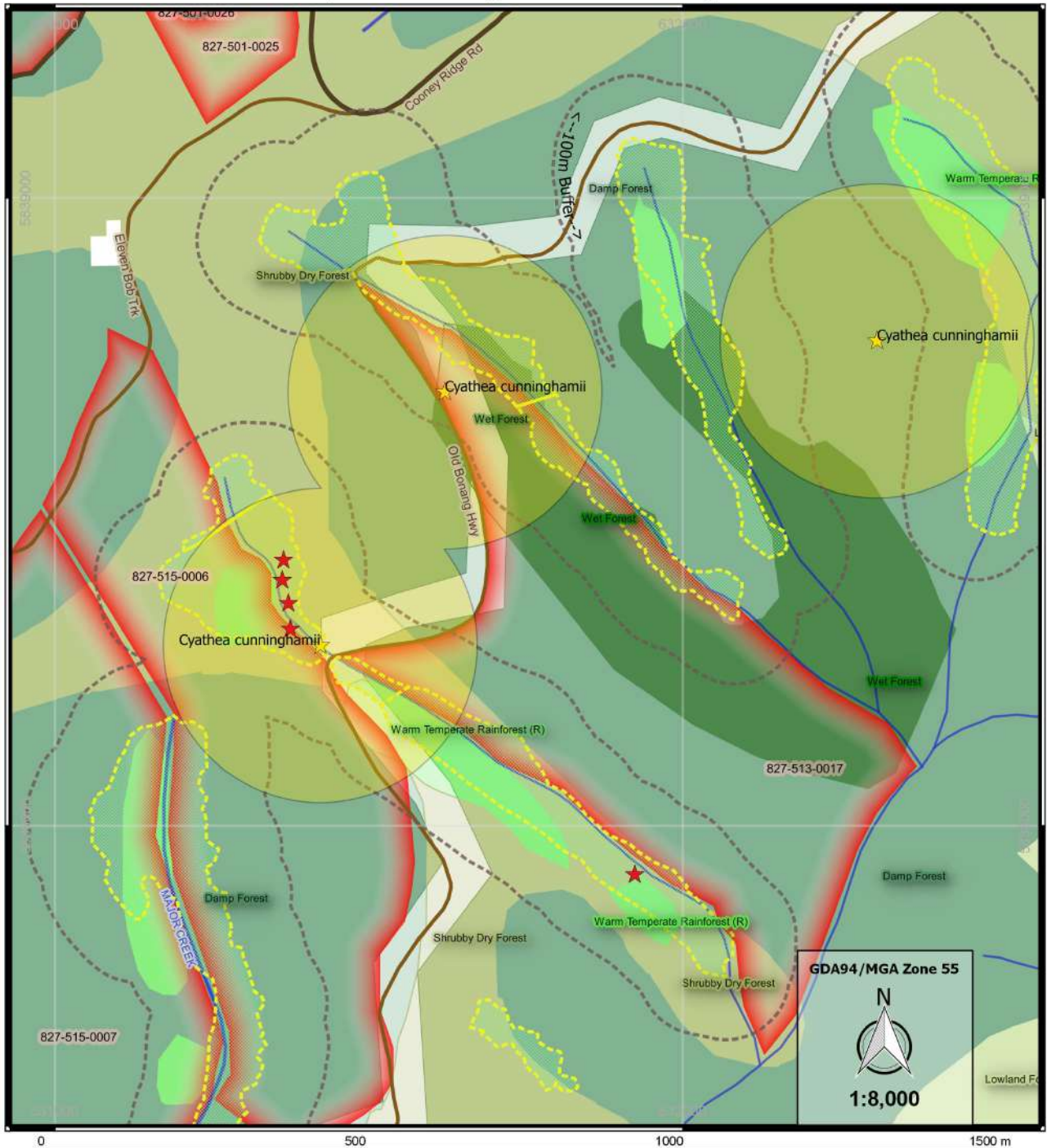


Legend

- | | | | |
|--|--|--------|---------------------------------|
| ▲ <i>Nematolepis squamea</i> subsp. <i>Squamea</i> Records | Watercourses | 199293 | Forest Type (EVC-NV2005) |
| 250m Buffer Satinwood Records | Approved_TRP_Boundaries_January_2017 | 199596 | Damp Forest |
| Satinwood Population Protection Zone | Severe Logging History (LOG_SEASON) | 199899 | Lowland Forest |
| Satinwood Record VBA_FLORA100 | 196869 | 199900 | Shrubby Dry Forest |
| Roads | 197677 | 200203 | Warm Temperate Rainforest |
| | 198182 | 200304 | Wet Forest |
| | | 200809 | |
| | | 200910 | |

Results 2. Map 3.

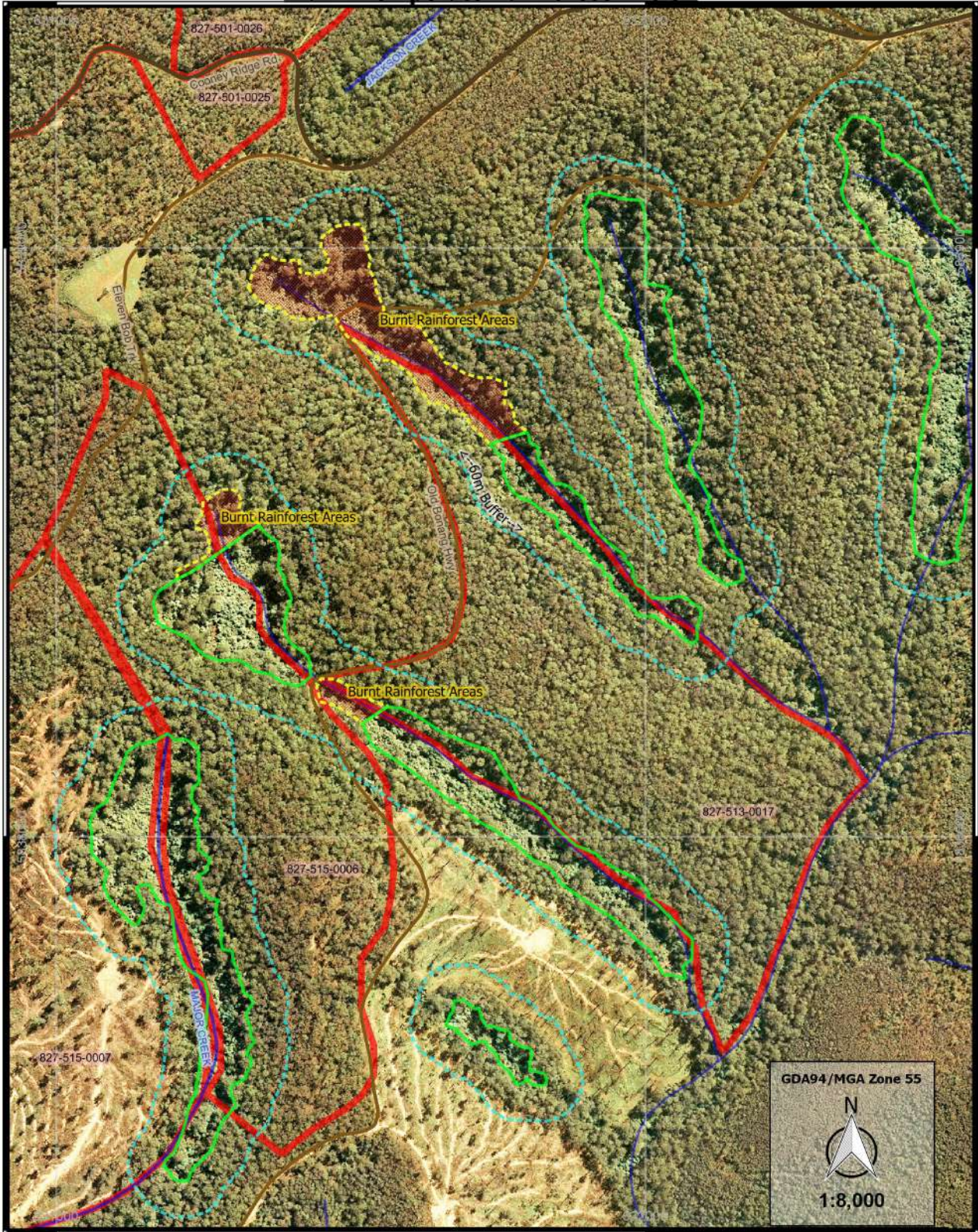
Mt Buck - VicForest Logging Coupe 827-513-0017
Rare & Threatened Flora Species
***Cyathea cunninghamii* (Slender Tree fern) & rare hybrid species *Cyathea marcescens* (Skirted Tree-fern)**



Legend			
	Verified <i>Cyathea cunninghamii</i> Records	Roads — Cooney Ridge Rd — Old Bonang Hwy	
	Unverified <i>Cyathea</i> Records		
	(Current FMZ) 250m SMZ (<i>Cyathea cunninghamii</i>)	Watercourses — Elverton Bobbicks Creek — Kangaroo Creek	
	Assessed Rainforest (<i>Cyathea cunninghamii</i> Habitat)		
	100m Logging Exclusion Buffer (<i>Cyathea cunninghamii</i> - Habitat)		Approved TRP Boundaries January 2017
		Forest Type (EVC-NV2005)	
			Damp Forest
			Lowland Forest
			Shrubby Dry Forest
			Warm Temperate Rainforest
			Wet Forest

Results 3. Map 4.

**Mt Buck - VicForest Logging Coupe 827-513-0017
Warm Temperate Rainforest EVC 32**



Legend			
	Assessed Burnt RainForest		60m Buffer Assessed Rainforest
	Aerial Assessed RainForest		Roads
			Watercourses
			Approved_TRP_Boundaries_January_2017

Results 4. Legislative Prescriptions associated with protected species & communities.

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.

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

From: “Management 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”

- 4.4.8.5 Special care is required when assessing the presence and extent of rainforest where disturbance such as fire has temporarily removed the rainforest canopy or has created temporary canopy gaps. In cases where the canopy disturbance is less than ten years old and further guidance as to the boundary of rainforest is required, the ‘differential species approach’ is to be used (Differential species keys for the delineation of rainforest boundaries can provide reference photos)⁷.
- 4.4.8.6 Where the rainforest canopy is absent and there is little or no evidence of the regeneration of a rainforest canopy after 10 years following disturbance the ‘differential species approach’ should not be used to identify rainforest and the stand should no longer be considered to be rainforest.

(*6) *While the rainforest might not have recovered sufficiently to meet the >70% projected foliage cover criterion within 10 years of disturbance, there will be sufficient evidence to indicate whether rainforest canopy species are regenerating in a manner likely to result in the re-establishment of rainforest as they mature. In cases where rainforest is likely to re-establish the differential species approach should be used to identify the boundary with the adjoining forest and the stand should be protected as if it were rainforest.*

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:

- 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*.

Description of the current state of rare and threatened flora and communities, and issues associated with logging.

Nematolepis squamea subsp. *Squamea* (Satinwood)

- This population of *Nematolepis squamea* subsp. *Squamea* (Satinwood) is the only known population within the East Gippsland forest management area, and at the south-east edge of its range (the only population east of ~Macalister River). The areas within and adjacent to vicforest logging coupe 827-513-0017 contain this rare plant species (**Satinwood**). Three south-eastern slopes of Mt Buck contain the only recent (since 2014) and reliable known records of this population. Most of the known population is either within coupe 827-513-0017 or area within ~100-250m of coupe.
- This population was extremely damaged by the 2014 bushfire, with all but two mature individual trees having been observed to be killed by fire, one of which was killed by deer (rubbing out) in years since fire. Many (over 100) young and juvenile individuals ranging from <10cm - ~1.5m tall (some have only two leaves on the ground level) were observed throughout large areas of these slopes. This makes it difficult to find individuals and determine population extent, as it is likely that more individuals are undetected and seedling/seed dormancy (where individuals are still coming up).
- With the mature population near-entirely killed in 2014 and nearly all individuals are young & juvenile, this in turn has used the ground & parent tree seed store (seed bank of population), and it is a critical & vulnerable time for the entire population. It is currently not known if the seed store has been replenished by viable seed to support a feasible seed bank for future against disturbance such as fire, logging and deer.
- Some individuals are “budding” and about to flower, this is likely that this is the first large flowering event for the population since the 2014 bushfire. And a critical time for population to re-establish a seed bank if there is enough viable seed produced.
- Logging within this coupe would deforest and destroy the ground layer likely destroying unrecorded individuals & ground seed. This would also open up a large area within the middle of this population, putting further pressure on current recorded individuals through long term and short term effects of timber harvesting, e.g.: threat of damage through harvest operations including burning, increased deer access and activity, changes in microclimatic conditions and increased fire risk from weighted regrowth after clear fell logging practices.

Cyathea cunninghamii (Slender Tree-fern) & *Cyathea x marcescens* (Skirted Tree-fern)

- The population of protected flora species *Cyathea cunninghamii* in the Mt Buck area has undergone significant degradation, with habitat reduced and compromised from past and recent logging disturbance, and recently (2014) bushfire. Two of the three verified records of this population were severely impacted by fire (2014) and unlikely to have survived (not found at site). Areas most likely to contain the surviving population, is the areas of intact surrounding suitable habitat.
- Areas of rainforest habitat surrounding VicForests logging coupes 827-513-0017 contained rare & threatened rainforest obligate fern species *Cyathea marcescens*, *Cyathea cunninghamii*. These rainforest areas containing such species did not all fall within the modelled rainforest from spatial data “NV2005_EVCBCS”.

Rainforest areas containing Slender Tree-fern & Skirted Tree-fern, did not always constitute Vicforests' narrow definition of rainforest “based only on structural overstorey configuration of a select few (9 species for Warm Temperature Rainforest in EG-FMA) canopy species”, none of which are tree-ferns.

This includes areas that have been subjected to past logging disturbance and contain significantly damaged rainforest stands. Other examples where environmental conditions were not presently suitable to constitute a continuous closed canopy of mature rainforest canopy species (such as Tree-fern dominated gullies or pockets, which host the protected *Cyathea* species *marcescens* & *cunninghamii* and other rainforest obligate flora species) include: bed rock tributaries and a large rocky waterfall where structure footing is not available for large rainforest trees to grow large dominate canopies.

- The policy of VicForest & stance of the department to not consider tree-fern canopy as rainforest, leaves much rainforest and its obligate species (such as rare and threatened tree-ferns) in danger of suffering long term impacts &/or being damaged or destroyed, during or after logging operations.

Warm Temperate Rainforest EVC 32

- Rainforests around Mt Buck have been impacted by the 2014 bushfire and in some badly damaged areas (identified on map 4) are undergoing a recovery process and are regenerating. In these “non-mature” rainforest areas, the 2014 bushfire has temporarily damaged or removed the rainforest canopy or has created temporary canopy gaps. These areas may be absent in mature rainforest canopy or less than 70% projected foliage cover and however contain evidence of the regeneration of rainforest and its canopy through regenerating rainforest canopy species.

When assessing the presence and extent of rainforest in such cases where fire disturbance has temporarily removed, reduced the rainforest canopy or has created temporary canopy gaps, special care must be taken as to not misinterpret or fail to recognise these protected communities. Guidance as to the boundary of rainforest require the use of the ‘differential species approach’ (Differential species keys for the delineation of rainforest boundaries) Cameron D. (2011) A Field Guide to Rainforest identification in Victoria. Department of Sustainability and Environment 2011.

Required actions for protection

Nematolepis squamea subsp. Squamea (Satinwood)

- As the exact locations of individuals and distribution of the population of *Nematolepis squamea subsp. Squamea* (**Satinwood**) are certainly not sufficiently known, nor is the habitat adequately represented in FMZ, the protection of this species must be established by use of regional prescriptions. The protection of substantial representative populations of rare & poorly known or edge of range, and includes mechanisms such as precautionary protection measures covering the species habitat throughout this area, together with a surrounding vegetative buffered area, suitable for providing protection & maintaining viability in the long term, and are excluded from the impacts of logging operations including regeneration burns.
- To achieve this protection, the three south-eastern slopes containing the spread of the known population must be placed into SPZ. See Map 2.

Cyathea cunninghamii (Slender Tree-fern)

- As the exact locations and population distribution of the FFG protected flora species *Cyathea cunninghamii* is certainly not sufficiently known in this area, nor is the habitat adequately represented in spacial datasets or recognised in the Vicforests rainforest field assessments. The protection of this species must be established by use of regional prescriptions. This includes mechanisms such as “precautionary principal” to provide protection covering the species habitat throughout these areas, together with a surrounding vegetative buffered area suitable for maintaining the micro-climatic conditions of sensitive plant communities, and are excluded from the impacts of logging operations including regeneration burns. To achieve this protection, SPZ buffers of a minimum 100-250m must be place on surrounding habitat of the population. See Map 3

Warm Temperate Rainforest EVC 32

- Rainforest in this area has suffered impacts of fire and areas may be at a stage where VicForests' standards of field identification and methods (canopy assessment) are not compatible with growth stage of regenerating rainforest. Use of ‘differential species approach’ must be the adopted method for the delineation of rainforest boundaries in these areas. Use of mechanisms such as “precautionary principle“ to provide protection measures (greater than the minimum requirements) covering the community's habitat throughout the area; and together with a surrounding vegetative buffer suitable for maintaining the micro-climatic conditions of sensitive ecosystems and plant communities, where they are excluded from the impacts of logging operations including regeneration burns.
- The area surrounding Mt Buck including VicForest coupe 827-513-0017, are held within a rainforest state Site Of Significance (EG42). Within these areas (priority 1&2) all rainforest are be afforded a minimum of a 60m vegetative buffer. See Map 4

Results 5. Conclusions & Recommendations

Nematolepis squamea subsp. Squamea (Satinwood)

- 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) require “all verified populations of species regarded as threatened at a State or national level in the SPZ or SMZ”. *Nematolepis squamea subsp. Squamea* (**Satinwood**) is a poorly known rare species, regarded as “Near Threatened” at a state level, and this population is the south-eastern extent & only known population within East Gippsland FMA. There are four areas in Victoria that have substantial populations occurring within large intact forest (Otway Rangers, Wonnangatta & Upper Macalister River areas, and the Mt Buck area. The latter is the most vulnerable after recent of disturbances (2014 bushfire) & most threatened as it is the only population to be outside of formal reserves.
- There is a high emphasis and weight to protect such examples from disturbance such as logging, for not doing so may be exact the cause enact further damage & degradation of species to fall within such category's. “Failing to act and adequately protect this population, adding logging as a threatening process and likely to be the trigger responsible for this species being regarded as threatened at a state level.”
- 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 4.5.2.2) requires “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”. As this population *Nematolepis squamea subsp. Squamea* (**Satinwood**) is rare poorly known species and at its SE of is bio-regional range & only records in the EG-FMA. This requires adequate protection zones that are viable for the success of the population in now and in the long term.
- 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 4.5.2.3) suggests “Wherever practicable include populations in larger parts of the SPZ or SMZ in combination with other values”. As *Nematolepis squamea subsp. Squamea* (**Satinwood**) is a near threatened & rare species often associated with rainforest, and this population is entirely situated within a rainforest SOS (EG-42). It would logical/practicable to contribute the population together with surrounding forest towards sub-catchment protection within the SPZ for rainforest in the Mt Buck SOS.

Cyathea cunninghamii (Slender Tree-fern)

- 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.

Recommended protection measures

Nematolepis squamea subsp. Squamea (Satinwood)

- No logging activities should occur within any of the slopes the in the Mt Buck area in proximaty to this population until knowledge that population of *Nematolepis squamea subsp. Squamea* (Satinwood) has, sufficiently recovered (population has enough time to mature to a resilient status, and the seed bank is viable and sufficient to have endurance for survival in the long term). And then knowledge of distribution of population in the area can be ascertained.
- Protect the Mt Buck population of *Nematolepis squamea subsp. Squamea* (Satinwood) buy placing the South-eastern slopes of Mt Buck into SPZ. See Map 2.
- The minimum logging exclusion buffer width's of 100-250m for all individuals. See Map 2.
- These protection measures must be applied as both a precautionary measure for the current critical situation for this species population & undiscovered individuals. And as adequate and representative protection for the viable existence of the species now and in the long term.

Cyathea cunninghamii (Slender Tree-fern)

- All records of *Cyathea cunninghamii* (Slender Tree-fern) must be placed in a Special Protection Zone of a minimum 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 are situated along a gully system, that gully system must be buffered by a minimum 100m vegetated buffer for a throughout the entirety of suitable habitat. See Map 3.
- 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 for the continued existence of the population now and in the long term (namely against changers in mocro-climatic condition, & increased risk of fire from logging regrowth).

Warm Temperate Rainforest EVC 32

- To delineated rainforest boundaries in the filed where the rainforest has had prior disturbance, the use of ‘differential species approach’ is to be used.
- To suitably buffer rainforest, when based on vegetation modelling and areal imaginary, buffers of a minimum 100m should be applied. See Map 4.
- All Warm Temperate Rainforest within the Mt Buck RSOS-42 should be add to the FMZ in the form of SPZ together with large surrounding buffers.
- Areas intact areas within Mt Buck (identified in Map 4) should should be become sub-catchment protection for rainforest within RSOS-42, and add to the FMZ as SPZ.

Recommended action

- Vicforests' track-record of poor practice for adequate protection and recognition of rainforest and significant flora is exacerbated by the limited view of VicForest responsibility, the minimum of the CODE mandatory actions is often inadequate to fulfil the the role of protection that it was outlined to do. Or interpretations of the CODE contradict the purpose of protection. And as result the minimum of the CODE is often the poorest of practice. As there are avenues to do more than the minimum, responsibility falls upon VicForest to conduct planning and operations above poorest practice.
- Ensure Vicforests is to abide by planning & management procedures to sufficiently recognise and protect ecological & biodiversity values from potential impacts of logging operations.
- The department DELWP, as regulator of logging operations in state forest, has the responsibility that must ensure that the most is made of the governing legislation to achieve realistic & adequate protection for environmental vales, including rare & threatened species and communities from impacts of logging operations, now and in the long term.
- The department DELWP, as manager of environmental vales in state forest, must ensure that actions are to be taken to prioritise significant environment values above commercial logging interest.
- To conduct adequate and thorough surveys in order to first identify and then protect threatened species from effects of logging.
- The narrow current (VicForest) 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. The continued practice of this approach is not an adequate assessment tool, or acceptable in relation to recognition & protection of rainforest and associated obligate significant flora taxa.