

INVESTIGATION REPORT

TREE GEEBUNG

(*Persoonia arborea*)

and additional **Greater Glider** (*Petauroides volans*) records

TOOLANGI STATE FOREST

CENTRAL HIGHLANDS

(Stony Creek, Plantation Road)

VicForests' Logging Coupe:

307-505-0011

Abstract

Forest areas within and/or adjacent to VicForests scheduled logging coupe 307-505-0011 were investigated to assess the presence of rare or threatened species.

A vulnerable Tree Geebung (*Persoonia arborea*) and a number of Greater Gliders (*Petauroides volans*) were identified during the survey. The following report concludes that VicForests, within coupe 307-505-0011 has scheduled and marked out logging that fails to protect a threatened plant and provides further evidence that logging is occurring in an area of forest currently inhabited by the Greater Glider “Listed” as a threatened species under Flora and Fauna Guarantee Act.

The methodology, results, discussion and recommendations arising from this investigation are further detailed within this report.

Status of Site

- Logging is currently occurring within coupe 307-505-0011

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Date of Investigation

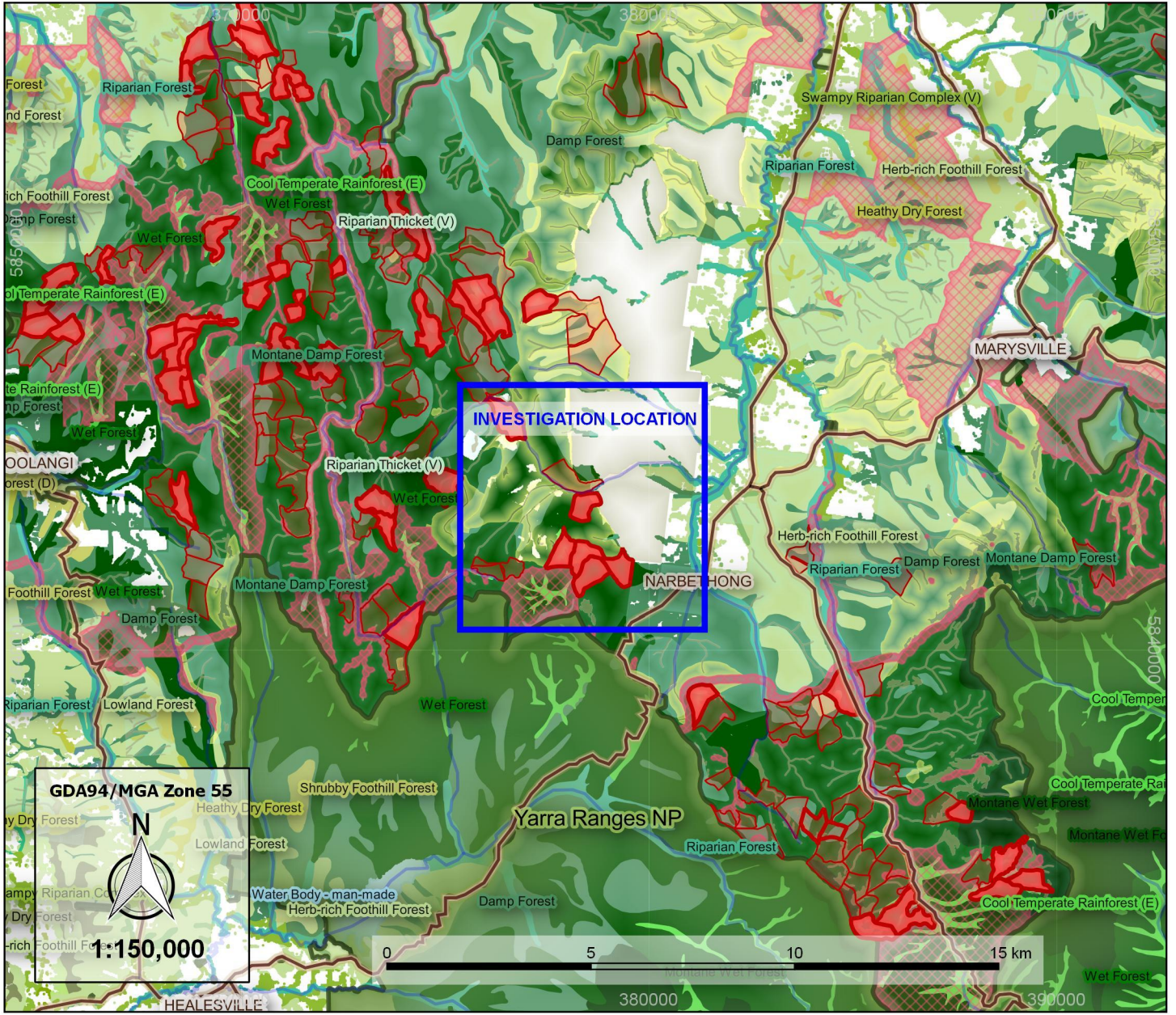
18-19/08, 28-29/08, 09/09 and 13-14/09/2017

Date of report

14/09/2017

Investigation Location Overview

Figure A. Investigation location: VicForests logging coupe 307-505-0011 off Plantation Road near Narbethong in the Toolangi State Forest, Central Highlands.



<p>Logging Disturbance and Scheduled Logging</p> <ul style="list-style-type: none"> Scheduled logging coupes [Approved_TRP_Boundaries __January_2017] 	<p>Forest Management Zones [FMZ100; DELWP Oct 2016]</p> <ul style="list-style-type: none"> Special Protection Zone Special Management Zone General Management Zone 	<p>Ecological Vegetation Classes [NV2005_EVCBCS (modelled)] (only Rare/Threatened listed)</p> <ul style="list-style-type: none"> Cool Temperate Rainforest Creekline Herb-rich Woodland Damp Heathy Woodland Grassy Forest Riparian Scrub/ Swampy Riparian Woodland Complex Riparian Thicket Shrubby Foothill Forest Swampy Riparian Complex Valley Grassy Forest 	<p>Other Layers</p> <ul style="list-style-type: none"> Code of Forest Practice Conservation Parks and Reserves Other Parks and Reserves Other Public Land Plantations Central Highlands Regional Forest Agreement Area Roads Watercourses 	<p>CENTRAL HIGHLANDS</p>
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Method 1 (method used) and Results 1 (summary and table)

Equipment Used

- Hand-held Spotlight
- Digital Photo/Video Camera
- Binoculars
- Compass
- Global Positioning System (GPS)
[Garmin GPS]

Method used/Results Summary

Incidental Tree Geebung (*Persoonia arborea*) detection [18-19/08 and 13-14/09/2017]

1. On the evenings of 18-19/08/2017 and 13-14/09/2017 within VicForests logging coupe 307-505-0011 large mature Tree Geebung (*Persoonia arborea*) individuals were observed.
2. The location of these Tree Geebungs were recorded at:
 - I. 55 H 378320 5843254 (GDA94/UTM) on 18-19/08/2017 as “TNE05PA” (Note: this location was returned to on 09/09/2017 and further photographs were obtained), and;
 - II. 55 H 378356 5843316 (GDA94/UTM) on 13-14/09/2017 as “GUIPA02”
3. Photographs of these Tree Geebungs were taken, some of which are displayed below (Figure 2.)
4. The map included below (Figure 3) shows the location of these Tree Geebungs and is labeled according to the “Waypoint ID” noted above.

Greater Glider (*Petauroides volans*) detections [28-29/08 and 13-14/09/2017]

5. On the evenings of 28-29/08 and 13-14/09/2017 spotlighting was undertaken within VicForests logging coupe 307-505-0011. Parts of the forest within and adjacent to these coupes were searched for the presence of nocturnal fauna including by shining a hand-held spotlight to detect fauna movement or “eye shine”.
6. As fauna were observed their locations were marked with a GPS and time, species, bearing from recording location, an estimate of the distance from observation location were noted and where possible video footage and/or photographs were taken.
(NB: where distance is recorded as "N/A" or 0, location coordinates of fauna species were recorded at or beneath the fauna location.)
7. The tables below summarise the Greater Glider records obtained as a result of the surveys described above.
8. Further presentation of this information, as well as conclusions and discussion arising from this investigations’ results are provided below.

Table 1. 28-29/08/2017 Nocturnal Fauna Records Summary

Time	Waypoint ID	Recording Location	Species	Common Name	Type	Bearing	Distance	Projected Animal Location
29/08 00:18	ST204GGV255025	55H 378219 5843209	<i>Petauroides volans</i>	Greater Glider	Visual	255°	25m	55H 378195 5843202
29/08 00:19	ST205GGV260030	55H 378216 5843211	<i>Petauroides volans</i>	Greater Glider	Visual	260°	30m	55H 378187 5843205

Table 2. 13-14/09/2017 Nocturnal Fauna Records Summary

Time	Waypoint ID	Recording Location	Species	Common Name	Type	Bearing	Distance	Projected Animal Location
14/09 00:23	GUI01GGV000000	55 H 378493 5843306	<i>Petauroides volans</i>	Greater Glider	Visual	0°	0m	55 H 378493 5843306
14/09 00:42	GUI02GGV000000	55 H 378486 5843220	<i>Petauroides volans</i>	Greater Glider	Visual	0°	0m	55 H 378486 5843220

Method 2 (Tree Geebung analysis/recommendations)

Excerpts from: “*Management Standards and Procedures for timber harvesting operations in Victoria’s State forests, 2014*”¹

“4. Biodiversity

4.2 Flora

4.3.1.1 Apply management actions for rare and threatened flora identified within areas affected by timber harvesting operations as outlined in Appendix 3 Table 14 (Rare or threatened flora prescriptions).²

Table 14 Rare or threatened flora prescriptions.³

FMA	Common name	Scientific name	Management
Central Highland FMAs	Tree Geebung	<i>Perssonia arborea</i>	Protect mature individuals from disturbance where possible.

Excerpts from: “*Advisory list of rare or threatened plants in Victoria - 2014*”⁴

Conservation Status in Victoria [Note: see column “DEPI” in the “Advisory List” excerpt below]

Code	Category
x	Presumed Extinct in Victoria: not recorded from Victoria during the past 50 years despite field searches specifically for the plant, or, alternatively, intensive field searches (since 1950) at all previously known sites have failed to record the plant.
e	Endangered in Victoria: at risk of disappearing from the wild state if present land use and other causal factors continue to operate.
v	Vulnerable in Victoria: not presently endangered but likely to become so soon due to continued depletion; occurring mainly on sites likely to experience changes in land-use which would threaten the survival of the plant in the wild; or, taxa whose total population is so small that the likelihood of recovery from disturbance, including localised natural events such as drought, fire or landslip, is doubtful.
r	Rare in Victoria: rare but not considered otherwise threatened - there are relatively few known populations or the taxon is restricted to a relatively small area.
k	Poorly Known in Victoria: poorly known and suspected, but not definitely known, to belong to one of the above categories (x, e, v or r) within Victoria. At present, accurate distribution information is inadequate.

Excerpt from the “Advisory List”:

Botanical Name	Common Name	EPBC	DEPI	FFG
Vascular Plants				
<i>Perssonia arborea</i>	Tree Geebung		v	X

1 *Management Standards and Procedures for timber harvesting operations in Victoria’s State forests 2014*, The State of Victoria Department of Environment and Primary Industries, 2014, pp. 32, 36, 94

2 *Management Standards*, p. 36

3 *Management Standards*, “Table 14 Rare or threatened flora prescriptions.”, p. 94

4 *Advisory list of rare or threatened plants in Victoria - 2014*, Department of Environment and Primary Industries, The State of Victoria Department of Environment and Primary Industries, 2014 pp. 3, 34

Results 2a (Tree Geebung photos)

Figure 2(a). Tree Geebung (*Persoonia arborea*) (TNE05PA) 55 H 378320 5843254 (GDA94/UTM) [18-19/08/2017]



Figure 2(b). Tree Geebung (*Persoonia arborea*) (TNE05PA) 55 H 378320 5843254 (GDA94/UTM) [09/09/2017]



Figure 2(c). Tree Geebung (*Persoonia arborea*) (TNE05PA)
55 H 378320 5843254 (GDA94/UTM) [18-19/08/2017]

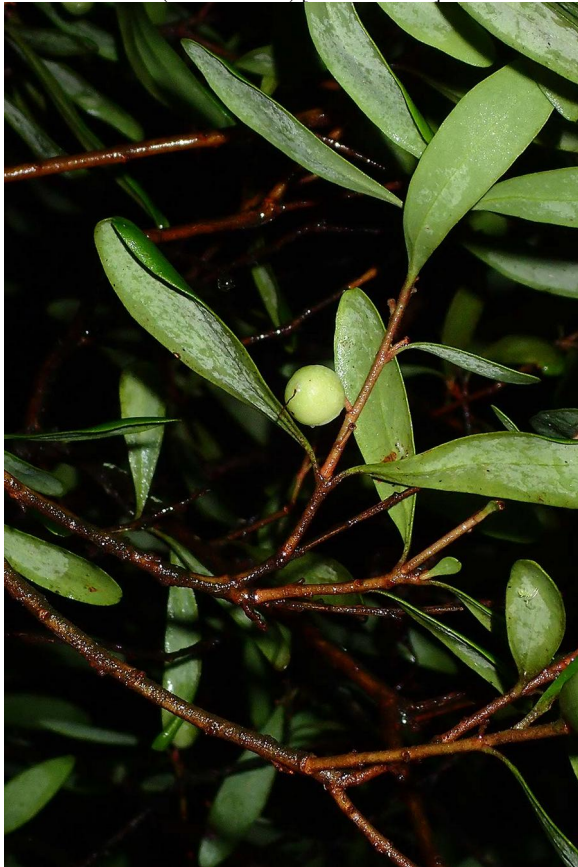


Figure 2(d). Tree Geebung (*Persoonia arborea*) (TNE05PA)
55 H 378320 5843254 (GDA94/UTM) [18-19/08/2017]



Figure 2(e). Tree Geebung (*Persoonia arborea*) (TNE05PA)
55 H 378320 5843254 (GDA94/UTM) [09/09/2017]



Figure 2(f). Tree Geebung (*Persoonia arborea*) (TNE05PA)
55 H 378320 5843254 (GDA94/UTM) [09/09/2017]



Figure 2(g). Tree Geebung (*Persoonia arborea*) (GUIPA02) 55 H 378356 5843316 (GDA94/UTM) [13-14/09/2017]

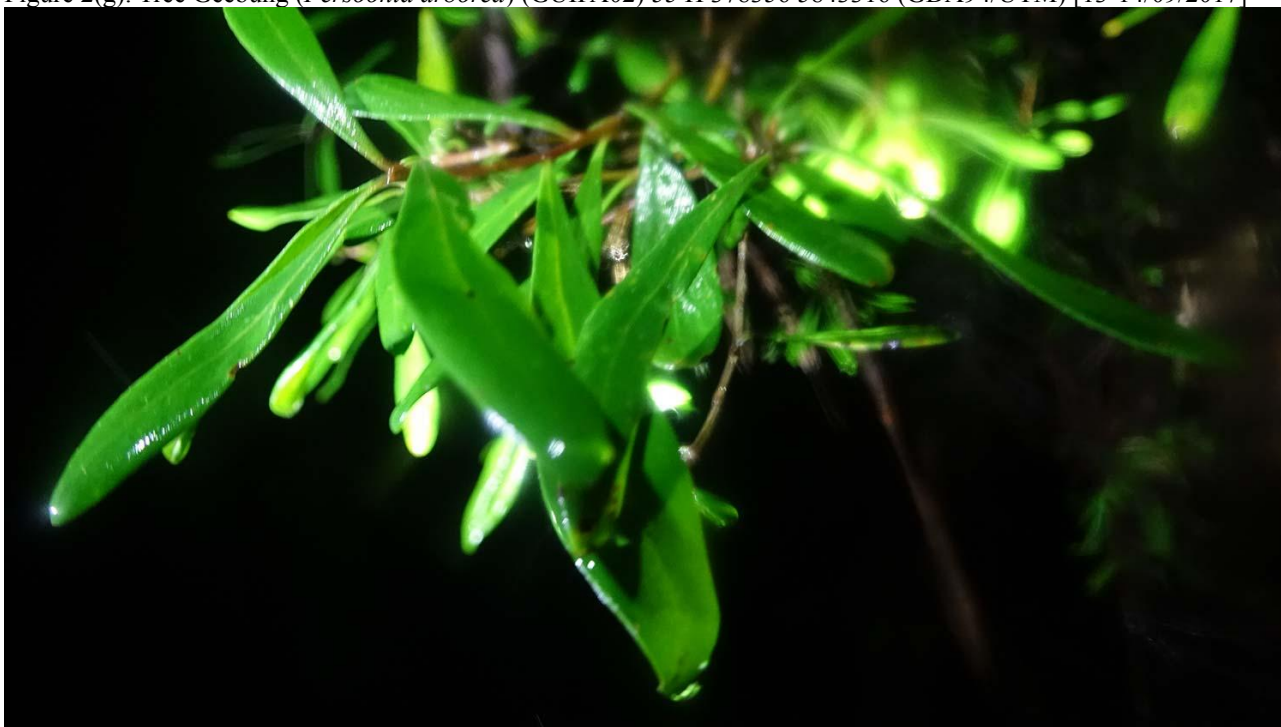


Figure 2(h). Tree Geebung (*Persoonia arborea*) (GUIPA02) 55 H 378356 5843316 (GDA94/UTM) [13-14/09/2017]

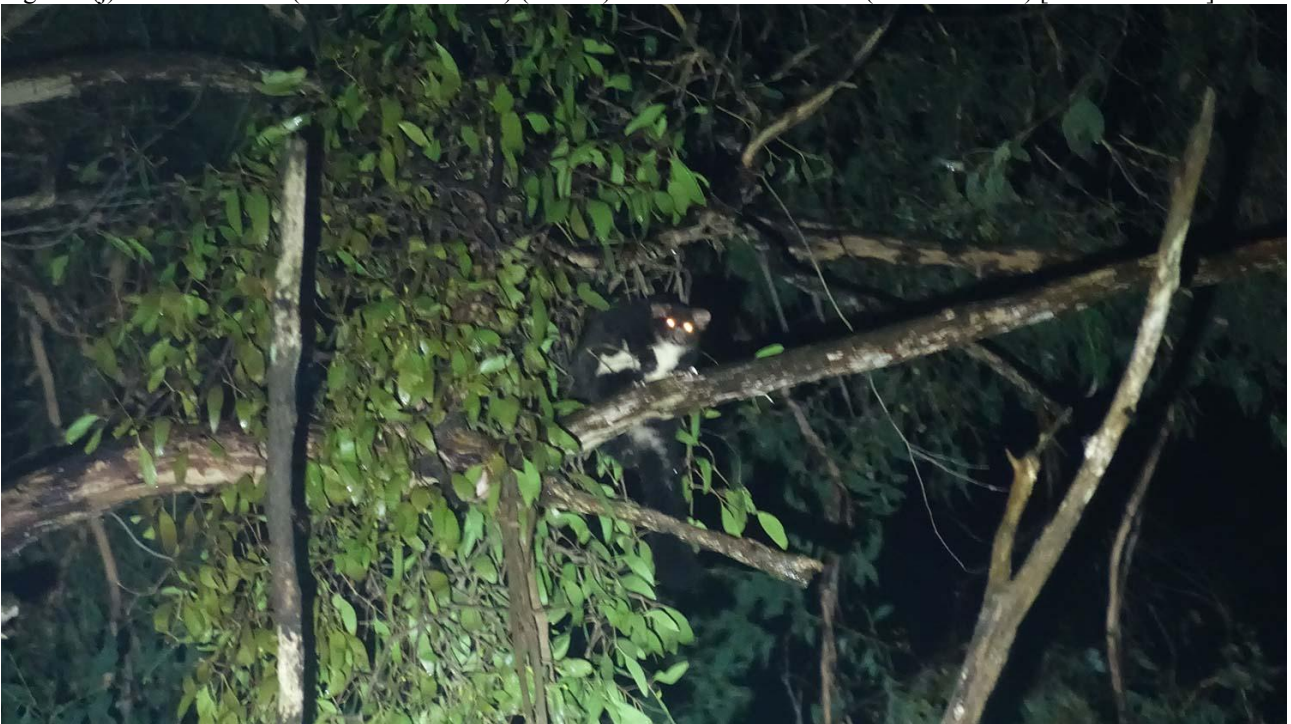


Results 2b (Greater Glider photos)

Figure 2(i). Greater Glider (*Petauroides volans*) (GUI01) 55 H 378493 5843306 (GDA94/UTM) [13-14/09/2017]

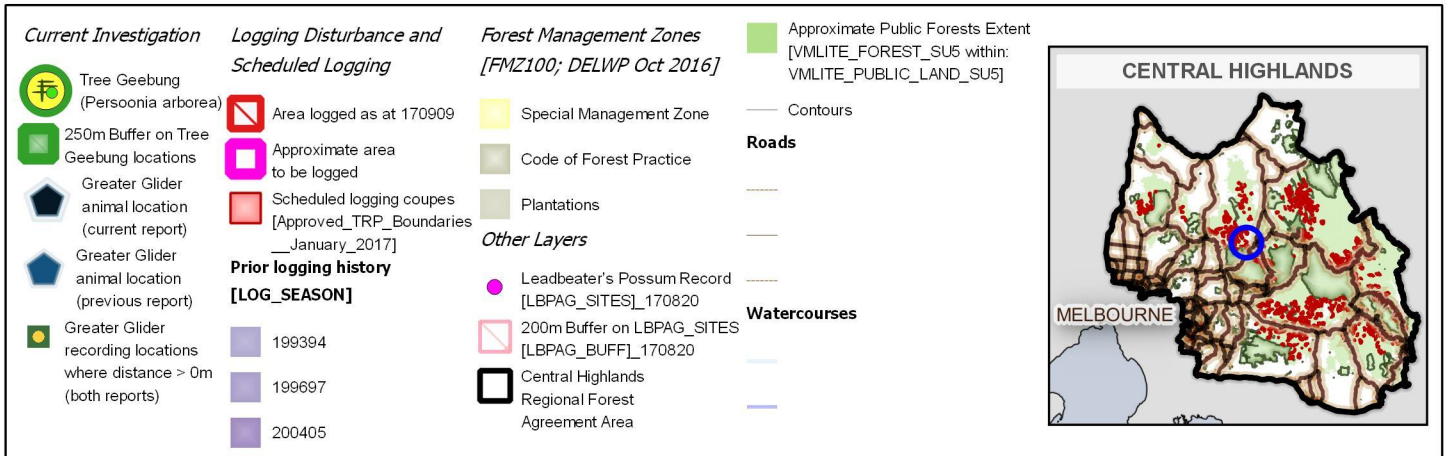
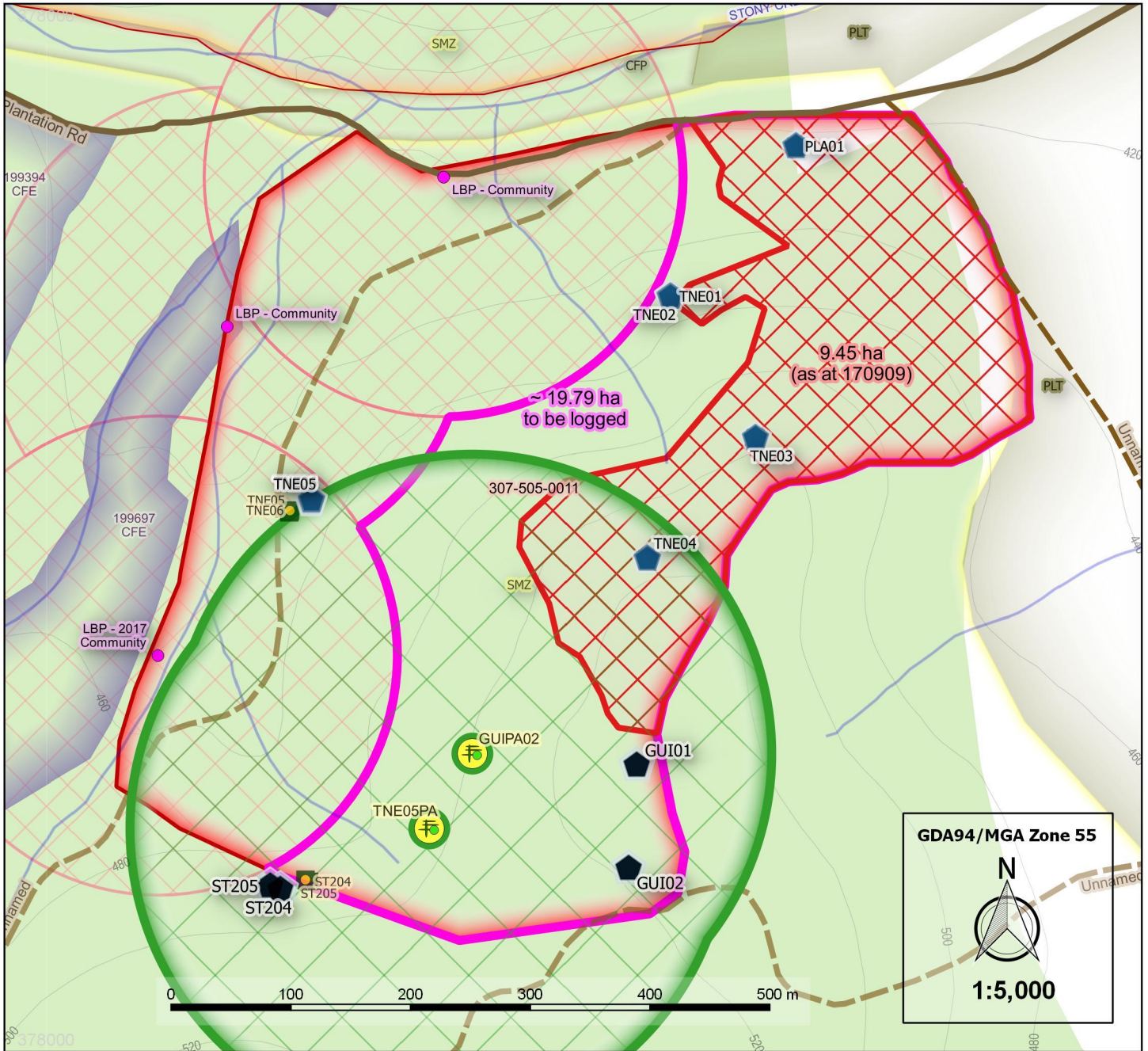


Figure 2(j). Greater Glider (*Petauroides volans*) (GUI02) 55 H 378486 5843220 (GDA94/UTM) [13-14/09/2017]



Results 3 (maps)

Figure 3(a). Biodiversity values at coupe 307-505-0011



Summary/Conclusions/Discussion

Greater Gliders (*Petauroides volans*)

1. Within and adjacent to VicForests scheduled and now active logging coupe 307-505-0011 Greater Glider (*Petauroides volans*) individuals were observed and recorded within nocturnal fauna surveys on the evenings of 28-29/08 and 13-14/09/2017. These record locations are displayed in the Tables and Maps of the Results sections of this report.
2. On 10 November 2016 the Victorian Flora and Fauna Guarantee Scientific Advisory Committee (SAC) received a nomination for listing as a threatened species for the Greater Glider (*Petauroides volans subsp. volans* Kerr 1792). A preliminary nomination supporting the listing of the Greater Glider was made on 21 November 2016 and on 16 March 2017 the SAC made its final nomination recommending the Greater Glider be listed as threatened.⁵
3. In the SAC's final nomination they noted that "Wood production practices are known to substantially deplete Greater Glider populations and gliders usually die if all or most of their home range is intensively logged or cleared (Menkhorst op. Cit.)".⁶
4. The SAC found that the Greater Glider satisfied their criteria for listing on the basis that:
 - a) The Greater Glider is "in a demonstrable state of decline which is likely to result in extinction";
 - b) The Greater Glider is "significantly prone to future threats which are likely to result in extinction", and;
 - c) The threat to the Greater Glider is "currently operating and is expected to operate at a level in the future which is likely to result in the extinction of the [greater glider]"⁷
5. The SAC note that:

"Timber harvesting in greater glider habitat has been proven to cause declines and/or local extinctions of greater glider populations (Lindenmayer et al. 2011, Kavanagh and Webb 1998, Lunney 1987, Dunning and Smith 1986, Tyndale-Biscoe and Smith 1969). Timber harvesting practices reduces the number of hollow bearing trees available for denning by tree removal or as a result of regeneration burns after the logging (Lindenmayer et al. 2011, 2002; Lunney 1987). In addition, the species does not cope well with habitat change (Kavanagh and Wheeler 2004, Tyndale-Biscoe and Smith 1969). Although all animals may not die from the initial impact they will die shortly afterwards. This is due to life history traits: affinity with home range, small home ranges, attachment to hollow bearing trees they use for denning and their specialist diet (Tyndale-Biscoe 2005).

In Victoria timber harvesting is widespread in the eastern and central parts of state. This is also the main distribution and habitat of the greater glider. Considering the known impacts of timber harvesting on gliders (Kavanagh and Webb 1998, Lunney 1987, Tyndale-Biscoe and Smith 1969, Dunning and Smith 1986), it is likely that other local extinctions of this species have already occurred and will continue to occur in the future." ...

"Local extinctions from fire, timber harvesting, drought or predation across the range of the greater glider will lead to a loss of habitat connectivity. McCarthy and Lindenmayer (1999) and Possingham et al (1994) found small patch sizes (McCarthy and Lindenmayer: less than 500 ha; Possingham et al. less than 1000 ha) of habitat are unviable for the greater gliders

5 Final Recommendation on a nomination for listing, *Petauroides volans subsp. volans* Kerr 1792 - Greater Glider (Nomination no. 879, Item no.: 11133), Flora and Fauna Guarantee Scientific Advisory Committee (SAC), March 2017, p. 1

6 *ibid.*, p. 3

7 *ibid.*, p. 1-2

long-term viability. Lindenmayer and Taylor (2003) found evidence of genetic erosion in the species after 5-6 generations in small forest patches (approximately 20ha) near Tumut in southern New South Wales.”⁸

6. The SAC also highlight that “Greater Gliders have recently been classified as ‘Vulnerable’ under the Environment Protection and Biodiversity Conservation Act 1999 (Department of Environment and Energy 2016)”.⁹
7. On 08 June 2017 in General Government Gazette “GG2017G023” Lily D’Ambrosio, Minister for Energy, Environment and Climate Change, and Jaala Pulford, Minister for Agriculture “*decided to recommend to the Governor in Council that the [Greater Glider] be added to the Threatened List for the reasons that [the Greater Glider] ... is in a demonstrable state of decline which is likely to result in extinction[, the Greater Glider] is significantly prone to future threats which are likely to result in extinction [and] the threat is currently operating and is expected to operate at a level in the future which is likely to result in the extinction of the taxon.*”¹⁰
8. On 14 June 2017 the Greater Glider was added to the “Threatened List” under the Flora and Fauna Guarantee Act, and notice was given of this on 15 June 2017 in the Victorian Government Gazette no. G24.¹¹
9. **Given the presence of Greater Gliders within and/or adjacent to coupe 307-505-0011 as detailed in this report, the Department of Environment, Land, Water and Planning (the Department) should restrain and VicForests should refrain from logging this coupe including to comply with the precautionary principle as required by the Code of Practice for Timber Production 2014.**

Tree Geebung (*Persoonia arborea*)

10. Within VicForests scheduled and now active logging coupe 307-505-0011 large mature Tree Geebung (*Persoonia arborea*) individuals were observed and recorded on the evening of 18-19/08 and 13-14/09/2017. These record locations are detailed and displayed in the Results sections of this report.
11. Tree Geebung is listed on the *Advisory list of rare or threatened plants in Victoria - 2014*, Department of Environment and Primary Industries, The State of Victoria Department of Environment and Primary Industries, 2014 as “vulnerable” to extinction.
12. The Code of Practice for Timber Production 2014 requires through section 4.3.1.1 and Appendix 3 Table 14 of the *Management Standards and Procedures for timber harvesting operations in Victoria’s State forests 2014*, The State of Victoria Department of Environment and Primary Industries, 2014 to “Protect mature [Tree Geebung] individuals from disturbance where possible”.
13. On the 28/08/2017 basic location details of the Tree Geebung (“TNE05PA”) were provided to the Department and VicForests including by clearly demonstrating the location of this plant on a map.

8 *ibid.*, p. 3

9 *ibid.*, p. 3

10 Victoria Government Gazette, By Authority of Victorian Government Printer, GENERAL No. G 23 Thursday 8 June 2017, <http://www.gazette.vic.gov.au/gazette/Gazettes2017/GG2017G023.pdf> (accessed 08/06/2017)

11 Victoria Government Gazette, By Authority of Victorian Government Printer, GENERAL No. G 24 Thursday 15 June 2017, <http://www.gazette.vic.gov.au/gazette/Gazettes2017/GG2017G024.pdf> (accessed 23/06/2017)

14. During a return visit to the this location on the 09/09/2017, coupe demarcation tapes placed in the forest of coupe 307-505-00011 indicated that this Tree Geebung location was scheduled to be cleared and logging operations had cleared forest vegetation to within 200m of this Tree Geebung plant. No observable on ground measures had been taken to demarcate and exclude this plant from the ongoing logging operations.
15. On the 13-14/09/2017 during a return visit to coupe 307-505-00011 an additional mature Tree Geebung plant was located within 150m of the logging disturbance in similar circumstances to those described above.
16. No efforts had or have been made to “Protect [these] mature [Tree Geebung] individuals from disturbance where possible” and the logging has commenced and continued in this area.
17. Further, section 2.2.2.4 of the *Code* requires as a mandatory action to:

*2.2.2.4 During planning identify biodiversity values listed in the Management Standards and Procedures prior to roading, harvesting, **tending** and **regeneration**. Address risks to these values through management actions consistent with the Management Standards and Procedures such as appropriate location of **coupe infrastructure**, **buffers**, **exclusion areas**, modified harvest timing, modified silvicultural techniques or retention of specific structural attributes."*
18. **Logging within coupe 307-505-0011 has failed to identify and comply with the measures regarding Tree Geebung protection required by the Code of Practice for Timber Production 2014.**
19. **This report recommends that logging operations be excluded from within a minimum 250m from each “vulnerable” Tree Geebung individual within VicForests logging coupe 307-505-0011 and where ever this species is found throughout its distributional range.**

Previously reported Greater Glider location “TNE04” after logging:

