

# Gliding towards extinction

An investigation into Greater Glider habitat logged since the species was listed as threatened under the Flora and Fauna Guarantee Act

Prepared by Goongerah Environment Centre, Fauna and Flora Research Collective and Wildlife of the Central Highlands

The second anniversary of the listing of the Greater Glider as a threatened species, June 2019.



PHOTO: Josh Bowell

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Report prepared by Goongerah Environment Centre, Fauna and Flora Research Collective and Wildlife of the Central Highlands.

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**Goongerah Environment Centre (GECO)** is a grassroots community group based in the town of Goongerah in far East Gippsland. Since 1993 GECO has campaigned for protection of East Gippsland's high conservation value forests.

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**The Fauna and Flora Research Collective Inc. (FFRC)** is an independent volunteer not-for-profit research collective engaged in surveying for threatened species and communities within Victoria's public forests that are subject to logging.

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**Wildlife of the Central Highlands (WOTCH)** is an independent volunteer-run grassroots organisation dedicated to protecting Victoria's native forests through the use of citizen science, community engagement and advocacy.

[wotch.org.au](http://wotch.org.au)



A Greater Glider found dead inside a logging coupe on the Errinundra Plateau, East Gippsland, in high value Glider habitat.



## Executive summary

Once common in eucalypt forests across Eastern Australia, the Greater Glider has suffered a rapid decline in the last two decades – two of the most significant threats are wildfire and logging.

With the bulk of its distribution in forests still available for logging, the Glider has little chance of recovery without rapid change in forest management and the protection of its remaining habitat.

While federal and state environment law acknowledges the Glider is facing extinction, it fails to provide protection.

The Glider is listed as vulnerable under the Australian *Environment Protection and Biodiversity Conservation Act 1999*, however, the logging industry operates under exemption from this legislation through Regional Forest Agreements between the federal and state governments.

On 14 June 2017, the Greater Glider was listed as a threatened species under *Victoria's Flora and Fauna Guarantee Act 1988*, requiring the creation of an Action Statement outlining how the species will be protected from threats, including logging.

Two years after its listing, no Action Statement has been released, appropriate protections have not been put in place and the Greater Glider continues to suffer direct mortality and extensive habitat loss due to logging.

This report analyses VicForests' logging plans, and the results of pre-logging surveys conducted by the government, VicForests and community groups, to examine how much Greater Glider habitat has been lost since the species was listed as threatened.

The report investigates 163 instances where spotlighting surveys have detected the presence of Greater Gliders inside logging coupes.

The report finds that, of the areas investigated, 44 logging coupes containing 192 Greater Glider detections representing approximately 602 hectares of habitat has been logged since the Glider's listing as a threatened species.

Of areas investigated, 119 logging coupes containing 534 Greater Glider detections representing approx. 2,716 hectares of habitat is scheduled for logging.

The report presents 18 case studies where high quality Greater Glider habitat has been logged or is scheduled for logging despite community groups reporting Greater Glider populations to DELWP in most cases.

The report finds that wide scale logging in rare, fragmented and high quality habitat is continuing across Victoria, resulting in the permanent loss of hundreds of hectares of habitat.

The report examines how the powers available to Victorian Minister for the Environment Lily D'Ambrosio and the Secretary of DELWP are not being used to protect the Greater Glider.

Despite clear pathways for action, two years after its listing as a threatened species, the Victorian government has failed to take appropriate action to prevent the identified, controllable threat of logging that is contributing to the Glider's decline towards extinction.

**Of areas investigated, 44 logging coupes containing 192 Greater Glider detections representing approximately 602 ha of habitat has been logged since the Glider's listing as a threatened species. Approximately 2,716 ha of habitat is scheduled for logging.**



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Logging underway in high value Greater Glider habitat in coupe 892-517-0007 in Queensborough River, East Gippsland.

## List of acronyms and abbreviations

ARI	Arthur Rylah Institute for Environmental Research
DELWP	Department of Environment, Land, Water and Planning
EJA	Environmental Justice Australia
EPBC Act	Environmental Protection and Biodiversity Conservation Act 1999
FCV	Forest Conservation Victoria
FFG Act	Flora and Fauna Guarantee Act 1988
FFRC	Fauna and Flora Research Collective
FoI	Freedom of Information Act 1982
GECO	Goongerah Environment Centre
WOTCH	Wildlife of the Central Highlands
GEG	Gippsland Environment Group
RFA	Regional Forest Agreement
ROP	Rolling Operations Plan
SAC	Scientific Advisory Committee
SFTA	Sustainable Forests (Timber) Act 2004
SOSF	Save our Strathbogie Forest
SPZ	Special Protection Zone
THSZ	Timber Harvest Safety Zone
TRP	Timber Release Plan
TSSC	Threatened Species Scientific Committee
the Code	Code of Practice for Timber Production 2014
the Department	Department of Environment, Land, Water and Planning
the Glider	Greater Glider
the Minister	Minister for Energy, Environment and Climate Change
the Secretary	Secretary of DELWP



Greater Glider . PHOTO: Josh Bowell.



## Background on community groups monitoring and reporting logging of threatened species' habitat, including Greater Glider habitat

In the absence of adequate monitoring and regulation of Victoria's state-owned logging agency (VicForests) to search for and protect threatened species prior to logging – the role of the Department of Environment, Land, Water and Planning (DELWP) – a movement of citizen science groups has emerged in Victoria.



### Goongerah Environment Centre (GECO)

GECO is a community conservation organisation based in the small town of Goongerah in far East Gippsland. GECO's reports document rare, threatened and protected species or communities (such as rainforest) in areas scheduled for logging, or where logging has commenced. GECO's forest survey program has resulted in the implementation of over 2000 ha of protection zones created in response to detections of rare, protected and threatened fauna and flora that would have been logged without GECO's survey efforts. GECO has received the Australian Conservation Foundation's Peter Rawlinson award and the Bob Brown Foundation Community Environment Prize for outstanding voluntary contribution to environmental protection.

[geco.org.au](http://geco.org.au)

Other community groups whose Greater Glider surveys are referred to in this report are **Forest Conservation Victoria (FCV)**, **Gippsland Environment Group (GEG)**, and **Save our Strathbogie Forest (SOSF)**.



### Fauna and Flora Research Collective (FFRC)

The FFRC has submitted well over 100 reports to DELWP documenting the presence of rare, threatened and protected species inside forest scheduled for logging. FFRC's reports have resulted in dozens of protection zones. Without the FFRC, logging would have gone ahead in these areas as the protected environmental values would not have been identified. The FFRC is currently awaiting judgement in their Victorian Supreme Court case against DELWP and VicForests that is seeking to protect large areas of old growth forests in East Gippsland. FFRC has received the Australian Conservation Foundation's Peter Rawlinson award for outstanding voluntary contribution to protecting the environment.

[faunaandfloraresearchcollective.wordpress.com](http://faunaandfloraresearchcollective.wordpress.com)



### Wildlife of the Central Highlands (WOTCH)

WOTCH is a volunteer citizen science organisation that monitors logging operations and conducts surveys for protected flora and fauna within the proposed Great Forest National Park in Victoria's Central Highlands. WOTCH surveys largely focus on Victoria's critically endangered faunal emblem, the Leadbeater's Possum. WOTCH surveys for Leadbeater's Possums have repeatedly found them within areas of forest that are scheduled for logging. Many of the Leadbeater's Possum sightings have been in areas that were actively being logged at the time of the WOTCH surveys. WOTCH has received Environment Victoria's Community Environment Award for outstanding contribution to our environment.

[wotch.org.au](http://wotch.org.au)

## PART 1. The decline of the once common Greater Glider

### The Greater Glider – background information

The largest of all gliding possums, the Greater Glider (*Petauroides volans*) was once common in eucalypt forests across Eastern Australia and found in high numbers in Eastern Victoria, high rainfall areas of the Midlands, South East of Ballarat and the Gippsland plains.<sup>1</sup> The last two decades have seen a rapid decline in the species due to habitat loss, primarily due to wildfire and logging.<sup>2</sup>

Endemic to Eastern Australia, the Glider's preferred habitat in Victoria includes forests dominated by *Eucalyptus regnans* (Mountain Ash) in the Central Highlands, *E. fastigata* (Brown barrel or Cut-tail), *E. viminalis* (Manna Gum), *E. radiata* (Narrowleaved Peppermint) in East Gippsland, *E. radiata* in north-east Victoria, and moist peppermint-stringybark-gum forest in the southern foothills of the Eastern Highlands. Less preferred are *E. sieberi* (Silvertop Ash) and *E. obliqua* (Messmate).<sup>3</sup>

This habitat preference is due to the Glider's folivorous diet that consists almost entirely of eucalypt leaves. Local

distributions of the Glider are heavily influenced by the availability of leaf species with higher concentrations of nutrients (especially nitrogen) and lower levels of toxins.<sup>4</sup>

The Glider is primarily solitary with a small home range of 1–4 ha, varying with habitat quality. Male home ranges are larger than those of females and do not overlap with those of other males, while female home ranges overlap with those of other females.<sup>5</sup> Reproductive maturity is reached at two years. Females produce one offspring annually from March to June with up to 50% of the female population not breeding in a given year.<sup>6</sup>

Like a number of threatened forest species, the Glider is reliant on tree hollows for shelter and breeding and must compete with these other species for a declining number of hollow-bearing trees. Eucalypt trees produce hollows at around 120 years, however, hollows may not be adequate for larger mammals like the Glider until 190 years.<sup>7</sup>

The abundance of old growth forest containing hollow-bearing trees has declined by 95 to 97% in the Central

Highlands.<sup>8</sup> In East Gippsland, very little old growth remains and it continues to be logged.

Their reproductive traits and requirements, along with limited dispersal ability, give the Greater Glider limited capacity to increase its population and therefore limited ability to recover from a decline. Add to this a rapid increase in habitat loss and fragmentation and the Glider is now extremely vulnerable to threats of wildfire and logging which can wipe out entire local populations.<sup>9</sup> Planned burning, drought and hyper-predation add further pressure.<sup>10</sup>

### Decline

Studies in the Central Highlands comparing sites in 1997 with 2016/17 report a decline of 50 to 65% in site occupancy for arboreal marsupial species dependent on large, old-cavity trees including the Greater Glider.<sup>11</sup> Further studies report a decline in Greater Gliders of 8.8% per year from 1987 to 2010 – a rate of 87% when extrapolated over two decades.<sup>12</sup>

In East Gippsland, unpublished data from a DELWP research project

identified a decline of approximately 50% in the last 20 years, higher than the decline of all other arboreal species.<sup>13</sup> A once high density population of Greater Gliders at Lake Tyers can no longer be detected during regular spotlighting tours; declines have also been recorded in Mount Alfred State Park and the Cathedral Ranges.<sup>14</sup>



Greater Glider. PHOTO: Caleb McElrea.

## The impacts of logging

Logging has been proven to cause declines and local extinctions of Greater Glider populations. Studies by Lindenmayer *et al.* 2011,<sup>15</sup> Kavanagh and Webb 1998,<sup>16</sup> Lunney 1987,<sup>17</sup> Dunning and Smith 1986,<sup>18</sup> and Tyndale-Biscoe and Smith 1969<sup>19</sup> demonstrate the impacts of logging on the Greater Glider.

The Victorian Scientific Advisory Committee (SAC) refers to timber harvesting foremost in their recommendation to list the Greater Glider as a threatened species, stating 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.*<sup>20</sup>

The SAC includes timber harvesting in a list of six threats that together constitute a threat that 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.*<sup>21</sup>

The Australian Threatened Species Scientific Committee (TSSC) lists habitat loss and fragmentation through

clearing, logging and prescribed burning as of *catastrophic* consequence to the Greater Glider.<sup>22</sup>

Due to the commercial desirability of eucalypt species that constitute the preferred habitat of the Greater Glider, and the value of larger trees, the logging industry actively targets mature forests that comprise the remaining fragments of viable Glider habitat.

Greater Gliders may be killed immediately when the tree they occupy is bulldozed or felled during logging operations, or is incinerated or collapses during post-logging burns. However, far greater numbers are lost in the days immediately following logging as the Glider does not leave its home range even when it is destroyed.<sup>23</sup> Gliders that are not killed during logging therefore starve or are subject to predation shortly afterwards.<sup>24</sup>

At a landscape scale, logging has dramatically reduced Glider habitat through loss of hollow-bearing trees, edge effects and fragmentation. As logging rotations vary from 20 to 80 years – far below the time it takes for trees to develop hollows – under current practice, forest that is logged will never again be viable habitat for Greater Gliders.

**Sub-criterion 1.2.2** *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.*

### Timber harvesting

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.

Extract from the Scientific Advisory Committee's final recommendation, that the Greater Glider be listed as a threatened species, describing the threat of timber harvesting.



DELWP data predicts there is 640,535 ha of Greater Glider habitat remaining in Victoria, 25% of this habitat is securely protected in formal reserves, 15% of habitat is within unsecure informal reserves and 60% is available for logging.<sup>25</sup>

Significantly, logging also increases wildfire risk, replacing moist, mature forests of diverse species with younger, more fire prone trees.<sup>26</sup> The interaction of wildfire and logging has been described as a *landscape trap* that is driving the collapse of the entire forest ecosystem, irreversibly replacing mature forest with a younger more fire prone ecosystem that can never reach old growth maturity.<sup>27</sup>

Climate change is further contributing to the creation of favourable conditions for more frequent, more intense wildfire, accelerating the landscape trap phenomena.<sup>28</sup> Logging fuels climate change through converting some of the world's most carbon dense forests into short-life products (around 80% of Victoria's logging industry is dedicated to paper pulp) and releasing thousands of tonnes of carbon into the atmosphere through post-logging burns.<sup>29</sup>

Greater Gliders are further threatened by climate change: through more severe

droughts, decreased nutritional quality and water content of foliage, and their intolerance to higher temperatures.<sup>30</sup>

Despite the devastating impact of major fires in 2003, 2006 to 2007, 2009 that destroyed much of the Glider's range in Victoria,<sup>31</sup> wood volumes contracted to the primary buyer of Victoria's native forests (Australian Paper) were not revised down. Nor were they revised down in 2014 when further fires heavily impacted Greater Gliders.<sup>32</sup>

For over two decades the Victorian government has provided a predefined volume of logs to industry for wood-chipping into pulp as specified in the *Forests (Wood Pulp Agreement) Act 1996*. This Act contributes to around 80% of forests logged in Victoria being dedicated to pulp logs for copy paper manufacturer Australian Paper (owned by Nippon) with supply volume locked in until 2030. With this Act in place, instead of pulp logging quotas being revised down following a drastic reduction in resource availability due to wildfire, logging has instead become further concentrated on the last remaining areas of high value Glider habitat. Logging of this habitat continues unabated.



A hollow-bearing tree pushed over and left in coupe 889-504-0011 at Granite Mt, East Gippsland. A person is circled for scale.

## Legal framework for protection

Listing of the Greater Glider as a vulnerable species under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) came into effect on 25 May 2016. Conservation Advice associated with this listing recommends that a Recovery Plan be prepared *as existing mechanisms are not adequate to stop the species' decline*.<sup>33</sup>

However, the logging industry operates under an exemption from the EPBC Act – Australia's principal piece of environmental legislation – due to agreements between the federal and state governments known as Regional Forest Agreements (RFAs).

Every other industry whose operations may impact on a commonwealth listed threatened species is required to have those impacts assessed under the EPBC Act. The Federal Minister can only approve operations (mining for example) with conditions in place to limit impacts. Because of the Regional Forest Agreements these assessments are not taking place where logging occurs in our forests.

The failure of RFAs to ensure the

implementation of environmental protection measures and their subsequent role in the decline of forest wildlife, such as the Greater Glider, is well documented.<sup>34</sup>

## The Code

Victorian RFAs require the logging industry to comply with only state regulations regarding threatened species protection. These are outlined in the *Code of Practice for Timber Production 2014* (the Code), Forest Management Plans and threatened species laws contained in the FFG Act.

Compliance with the Code is a mandatory licence condition and a requirement under the authorisations provided to logging agency VicForests under the *Sustainable Forests (Timber) Act 2004* (SF Act).

Under the Code, the Greater Glider receives limited protection in the East Gippsland RFA area only, whereby the establishment of a Special Protection Zone (SPZ) of approximately 100 ha of suitable habitat is required *where verified records report more than 2 individuals per hectare, more than 10 individuals per km or more than 15*

*individuals per hour of spotlighting, or where substantial populations are located in isolated or unusual habitat*.<sup>35</sup>

Greater Gliders detected outside East Gippsland are afforded no protection from logging under the Code.

A stark example of the absurdity of this situation is outlined in Case Study 6 of this report, where the highest density of Greater Gliders recorded in Victoria was subject to logging in the Strathbogie Ranges, despite being recorded at a density of 14.7 Gliders per km, higher than the threshold for protection in East Gippsland.

In any case, the high number of Glider detections required to trigger protection in East Gippsland means that the vast majority of Greater Gliders detected in this area also go unprotected.

EPBC Conservation Advice points out that the threshold for protection outlined in the Code is high given that density estimates in Victoria range from 0.6 to 2.8 individuals per hectare and Glider density is in rapid decline, and *may therefore not adequately protect existing habitat and greater glider populations*.<sup>36</sup>



The very aim of protecting only areas where high densities of the Glider are detected leads to the perverse outcome whereby small refuges of high value Greater Glider habitat harbouring low numbers of Gliders that have managed to persist are afforded no protection, making local extinction inevitable. In other words, the lower the number of Gliders and therefore the more critical their need for protection, the less likely they are to be protected.

Given that RFAs were drafted over 20 years ago, it is unsurprising they lack protections appropriate to the status of threatened forest species today.

Under section 2.2.2.2 the Code further states that *the precautionary principle must be applied to the conservation of biodiversity values*, and under section 2.2.2.3 that *the advice of relevant experts and relevant research in conservation biology and flora and fauna management must be considered when planning and conducting timber harvesting operations*.<sup>37</sup>

The many instances of logging of Greater Gliders and the destruction of their habitat, the absence of precautionary action to prevent possible harm, and the rejection of

advice from expert ecologists and the government's own Scientific Advisory Committee (demonstrated in this report and detailed in Part 4) demonstrates that these mandatory regulations are not being followed.

### **The Flora and Fauna Guarantee Act**

The listing of the Greater Glider as a threatened species in Victoria under the *Flora and Fauna Guarantee Act 1988* (FFG Act) came into effect on 14 June 2017. Under the Act, an Action Statement must be prepared, *ensuring the proper management of potentially threatening processes*, as soon as possible after listing.<sup>38</sup>

In documents obtained under the *Freedom of Information Act 1982* (Fol Act), DELWP states that this process would normally take six months including stakeholder consultation.<sup>39</sup> Two years on from the listing of the Greater Glider, an Action Statement has not been produced.



A post-logging burn in coupe 484-501-0026 in Baw Baw, Victoria's Central Highlands.



A large tree developing a central hollow logged in coupe 889-504-0011 at Granite Mt, East Gippsland (top). The difference in biodiversity before and after logging is illustrated by logging inside coupe 483-504-0001 at Baw Baw in Victoria's Central Highlands (bottom).

In the same document, DELWP states that the development and assessment of options for protection of the Greater Glider will be based on advice from DELWP biodiversity experts, scientific information *and consideration of the potential impacts on timber availability*.<sup>40</sup> This statement provides a stark illustration of the vested interests that exist within DELWP in relation to logging – discussed in Part 4 of this report.

DELWP are failing in the first instance in their duty to ensure the protection of a threatened species under state legislation, and failing in the second instance in their duty as regulator of the logging industry to monitor operations and enforce mandatory regulations to protect the Greater Glider from logging.

### **Powers of the Minister and Secretary**

Both the Minister in charge of DELWP (the Minister for Energy Environment and Climate) and the Secretary have the power to intervene and halt harmful logging activities.

Under the FFG Act, the Secretary can declare critical habitat for the Greater Glider and the Minister can issue an

Interim Conservation Order to stop logging within the critical habitat.

It is also possible for the Minister to request her Department, under the *Sustainable Forests (Timber) Act 2004*, to issue a direction to VicForests to apply the precautionary principle and refrain from logging in areas of high value habitat for the Greater Glider or where the species has been found.

Environmental Justice Australia argues that both these options would be appropriate actions to take while detailed protections are being established under the FFG Act through the creation of an Action Statement.<sup>41</sup> In fact, in November 2018 the SAC wrote directly to the Minister requesting she use these powers to protect Greater Gliders in the Strathbogie Ranges – further discussed in Part 4 of this report.<sup>42</sup>

To date there is no indication that the Minister is willing to use these powers. This report provides numerous examples where DELWP and the Minister failed to prevent logging in rare, fragmented and high quality habitat – even when Greater Gliders were detected.



## PART 2. Greater Glider habitat logged since the species was listed as threatened on 14 June 2017

This section describes the methods used by community groups, VicForests and DELWP to detect Greater Gliders in areas earmarked for logging.

Table 1 on pages 19-20 lists VicForests logging coupes where Greater Gliders were detected that have been logged since June 2017 when the species was listed as threatened on the FFG Act.

The area logged figures in Table 1 has been calculated using DELWP's logging history spatial datasets and in some cases, such as recently logged coupes where this information is not yet available, measured on the ground by community groups and/or via satellite imagery.

Table 2 on pages 21-22 lists VicForests logging coupes where Greater Gliders have been detected that are scheduled to be logged.

Table 3 on pages 25-26 lists coupes where Greater Gliders have been detected and logging is currently on hold pending the outcome of a Federal Court case concerning protection of Leadbeater's possum and Greater Glider habitat in the Central highlands (*Friends of Leadbeater's Possum Inc v VicForests*).

Maps 1-4 depict locations where Greater Gliders have been detected across the East Gippsland, Central Highlands, Tambo and North East management areas in coupes that have been logged and coupes that are scheduled to be logged.

Pages 30-40 detail case studies of logging coupes that have been logged since June 2017 when the Greater Glider was listed under the FFG Act. Pages 41-48 detail case study coupes that are scheduled to be logged where Greater Glider's have been detected.

### Detecting Greater Gliders through spotlighting surveys

Nocturnal spotlighting surveys are a simple, widely used method for detecting Greater Gliders. This involves surveyors walking through forests where Gliders are likely to be present shining high powered torches or spotlights into the canopy to search for the Glider.



A Greater Glider in the spotlight at Hermitage Creek (top). PHOTO: Donovan Wilson. Spotlighting in Cottonwood Range, East Gippsland (bottom). PHOTO: Raphael Korman.

Results will vary depending on the hour, season, and weather conditions at the time the survey is conducted.<sup>43</sup> Variability in detection rates between surveys in the same area is common, indicating that more than one survey may be needed to obtain an accurate idea of the density of Gliders.

Wintle *et al.* (2005) found that, under average environmental conditions, five visits were needed to yield a detection probability of about 90%.<sup>44</sup> Lindemayer *et al.* (2001) found that detection rates varied from 10% to 43% when repeat surveys were averaged within three forest patches where the density of Greater Gliders was already known.<sup>45</sup>

These findings suggest that a single survey is unlikely to be adequate in accurately determining Greater Glider density or deciding if a density is present that triggers protection in East Gippsland.

### Community surveys

GECO, FFRC and WOTCH work together with ecologists and conservationists across Victoria to monitor logging of rare and protected species and high value habitat. Together they have

accumulated expert understanding of the preferred habitat of Greater Gliders and where they exist across Victoria. Using this knowledge, the groups survey forest where Gliders are likely to occur and logging is scheduled.

### VicForests surveys

VicForests website states the agency uses a *risk-based approach to manage threatened flora and fauna* comprising a three tiered process: *desktop assessment (all coupes), coupe transect (all coupes), and targeted species survey (coupes deemed high-risk)*.<sup>47</sup> Therefore, surveys for Greater Gliders are only carried out in coupes deemed high-risk of containing the Glider by VicForests, and this process is not carried out at all for Greater Gliders in the Central Highlands and other areas outside East Gippsland.

VicForests surveys do not cover the breadth of forest inside a coupe that community surveys do, largely due to the budget set for threatened species detection. Spotlighting for Greater Gliders under VicForests program will often take place along roadsides adjacent to the coupe or along a single-line transect into the coupe and therefore exclude significant areas of Greater Glider habitat from the survey.

For example, a survey report from January 2019 states transects of one kilometre were completed within each coupe or along coupe boundaries where roads or tracks were present.<sup>48</sup>



A large logged tree inside coupe 462-502-0001 after post-logging burn, in Noojee, Victoria's Central Highlands.



Surveys are conducted at a time convenient to planning logging operations rather than taking into consideration conditions that may affect the activity of the Glider. As seen in this report, there are numerous examples of VicForests failing to survey for Greater Gliders and community groups subsequently detecting them, often in high densities.

There are also instances of VicForests carrying out surveys that detect no Gliders and community groups subsequently finding high densities, including one case where GECCO found 22 Gliders during one survey in Cottonwood Range, where VicForests had failed to find a single Greater Glider.<sup>49</sup>

This is not surprising considering that, in conducting pre-logging surveys for threatened species, VicForests number one priority remains fulfilling logging contracts, in contrast to the aim of community groups – protecting threatened species.

Since 2009, community groups have submitted over 300 surveys to DELWP reporting rare and threatened flora and fauna that VicForests had failed

to identify,<sup>50</sup> demonstrating the inadequacy of placing a logging agency in charge of detecting threatened species.

### **DELWP surveys**

Due to VicForests' record of failing to identify and subsequently logging forests containing rare and threatened species, DELWP commenced its own pre-logging survey program in 2018, renaming it the Forest Protection Survey Program. This program was set up to address the obvious conflict of interest that exists in VicForests conducting its own surveys for species that, if found, could reduce the area available for logging.

DELWP's process for determining where a survey will take place is based on where VicForests plans to log in the coming months, as listed in their Rolling Operations Plan (ROP). This plan is subject to change and DELWP has communicated that in some instances surveys have not been able to take place because VicForests has brought forward logging plans and commenced logging without a survey.

This highlights the lack of control DELWP has over VicForests, despite their role as the regulator who is responsible for ensuring that threatened species and protected environmental values are identified prior to logging. It would appear that under this arrangement VicForests is free to do as they please and DELWP is unwilling to issue directions to curtail logging operations until surveys are conducted.

DELWP determine where surveys for Greater Glider should take place based on desk top analysis using DELWP's Greater Glider Habitat Distribution Model. However, there are recent instances of DELWP failing to survey for Greater Gliders and allowing logging to go ahead where forest within a coupe is listed as high quality habitat on DELWP's Greater Glider Habitat Distribution Model (GG HDM).

Cottonwood Range (Case Study 1) and Granite Mountain (Case Study 4) are both well-known Greater Glider hotspots where habitat scoring ten out of ten for high quality habitat on the GG HDM has been logged. A Glider hotspot in nearby Queensborough River scoring ten out of ten for habitat quality is scheduled for logging (see Case Study 15).



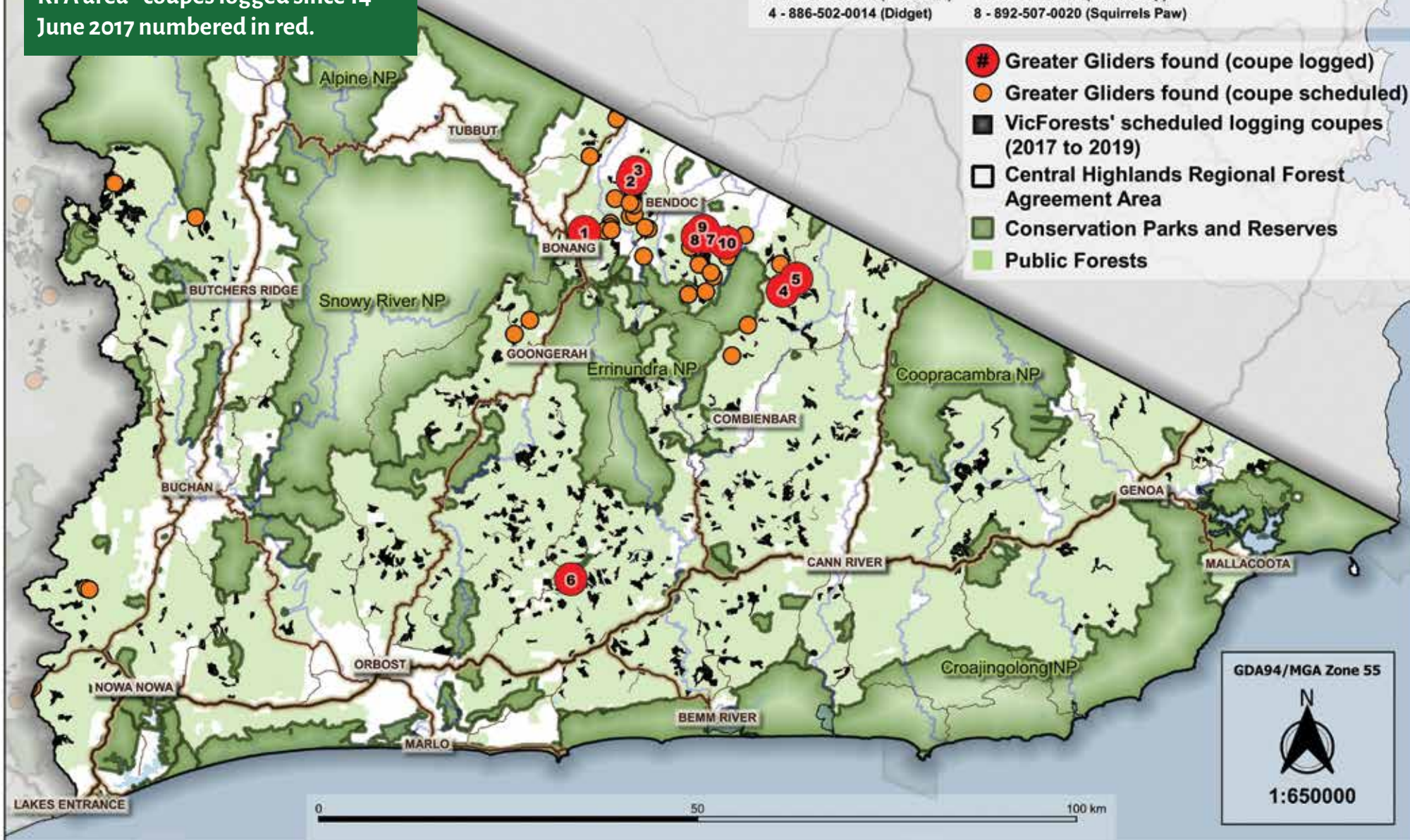
A large logged tree inside the Granite Mountain coupe (Case study 4), high quality Greater Glider habitat that DELWP failed to survey.

Map 1. Location of logging coupes where Greater Gliders have been detected within the East Gippsland RFA area - coupes logged since 14 June 2017 numbered in red.

### EAST GIPPSLAND REGIONAL FOREST AGREEMENT AREA

- |                              |                                  |                                 |
|------------------------------|----------------------------------|---------------------------------|
| 1 - 893-501-0006 (Quilt)     | 5 - 889-504-0011 (Fashizzle)     | 9 - 892-507-0021 (Coyotes Paw)  |
| 2 - 895-513-0018 (Cow Topia) | 6 - 832-501-0018 (Selwyn)        | 10 - 892-517-0007 (Six and Out) |
| 3 - 895-513-0020 (Blackbird) | 7 - 892-507-0006 (Quick Step)    |                                 |
| 4 - 886-502-0014 (Didget)    | 8 - 892-507-0020 (Squirrels Paw) |                                 |

- # Greater Gliders found (coupe logged)
- Greater Gliders found (coupe scheduled)
- VicForests' scheduled logging coupes (2017 to 2019)
- Central Highlands Regional Forest Agreement Area
- Conservation Parks and Reserves
- Public Forests



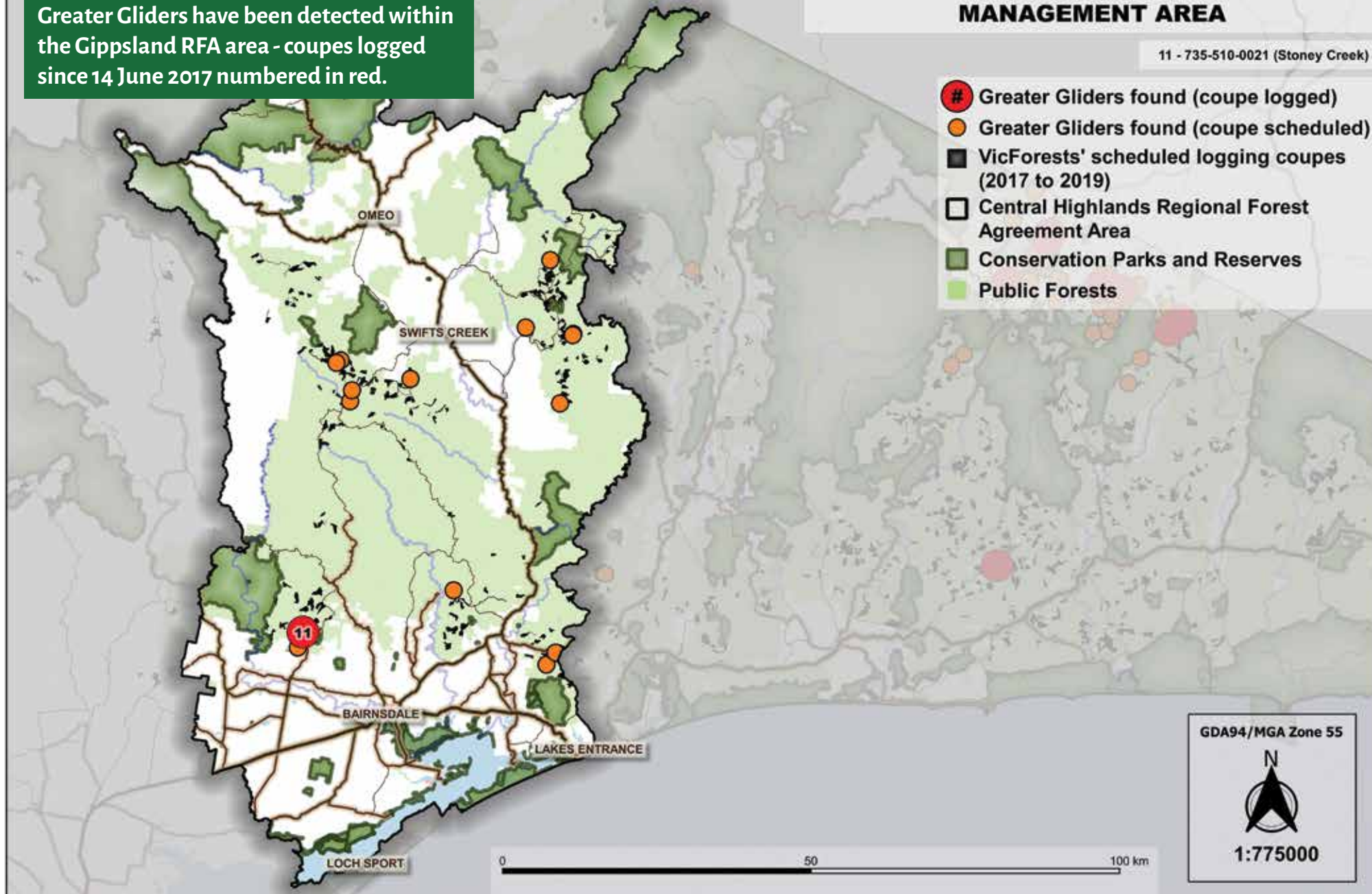


Map 2. Location of logging coupes where Greater Gliders have been detected within the Gippsland RFA area - coupes logged since 14 June 2017 numbered in red.

## TAMBO FOREST MANAGEMENT AREA

11 - 735-510-0021 (Stoney Creek)

- Greater Gliders found (coupe logged)
- Greater Gliders found (coupe scheduled)
- VicForests' scheduled logging coupes (2017 to 2019)
- Central Highlands Regional Forest Agreement Area
- Conservation Parks and Reserves
- Public Forests





## CENTRAL HIGHLANDS REGIONAL FOREST AGREEMENT AREA

Map 3. Location of logging coupes where Greater Gliders have been detected within the Central Highlands RFA area - coupes logged since 14 June 2017 numbered in red.

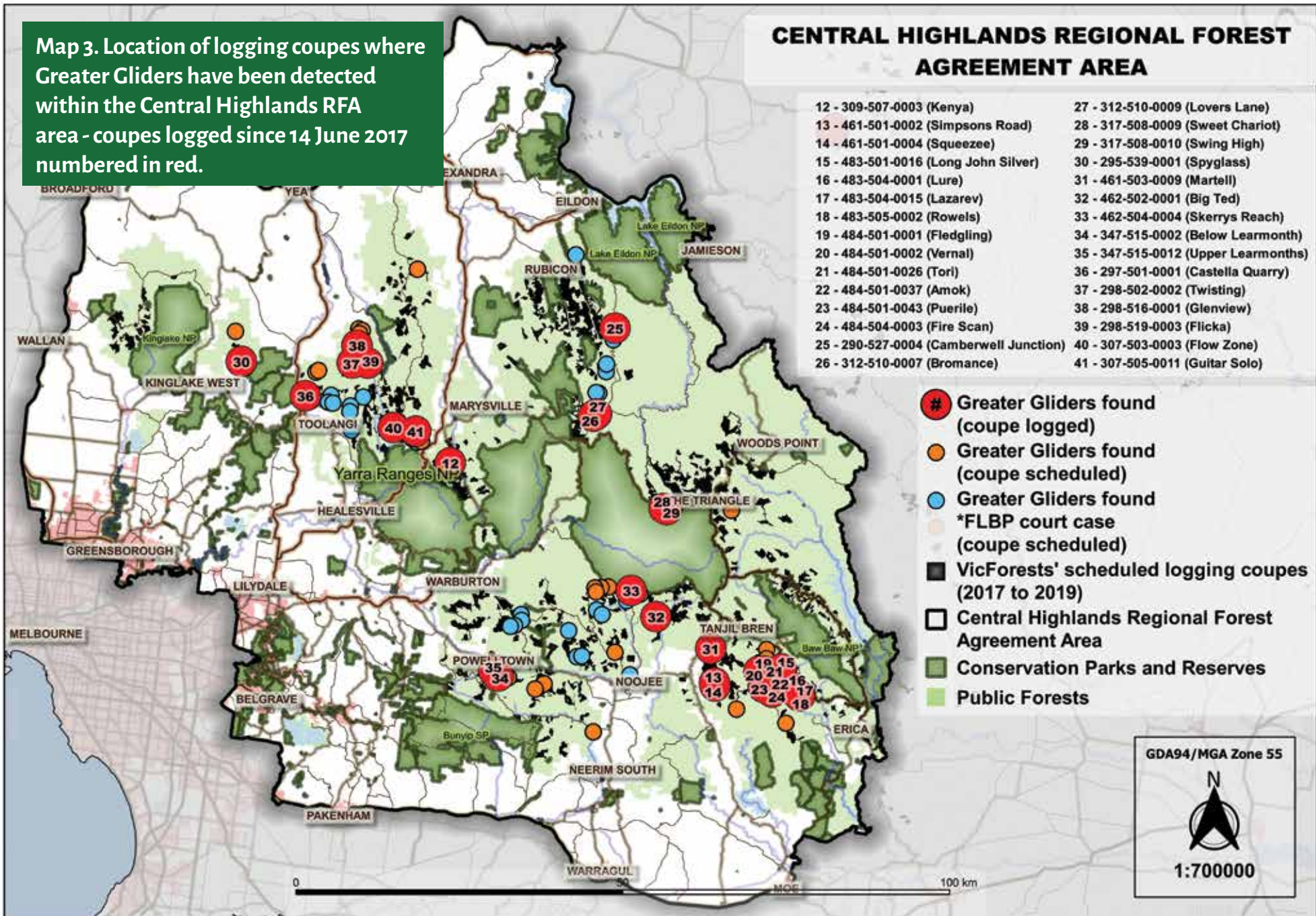
- |   |                                     |
|---|-------------------------------------|
| 12 - 309-507-0003 (Kenya)               | 27 - 312-510-0009 (Lovers Lane)     |
| 13 - 461-501-0002 (Simpsons Road)       | 28 - 317-508-0009 (Sweet Chariot)   |
| 14 - 461-501-0004 (Squeezee)            | 29 - 317-508-0010 (Swing High)      |
| 15 - 483-501-0016 (Long John Silver)    | 30 - 295-539-0001 (Spyglass)        |
| 16 - 483-504-0001 (Lure)                | 31 - 461-503-0009 (Martell)         |
| 17 - 483-504-0015 (Lazarev)             | 32 - 462-502-0001 (Big Ted)         |
| 18 - 483-505-0002 (Rowels)              | 33 - 462-504-0004 (Skerrys Reach)   |
| 19 - 484-501-0001 (Fledgling)           | 34 - 347-515-0002 (Below Learmonth) |
| 20 - 484-501-0002 (Vernal)              | 35 - 347-515-0012 (Upper Learmonth) |
| 21 - 484-501-0026 (Tori)                | 36 - 297-501-0001 (Castella Quarry) |
| 22 - 484-501-0037 (Amok)                | 37 - 298-502-0002 (Twisting)        |
| 23 - 484-501-0043 (Puerile)             | 38 - 298-516-0001 (Glenview)        |
| 24 - 484-504-0003 (Fire Scan)           | 39 - 298-519-0003 (Flicka)          |
| 25 - 290-527-0004 (Camberwell Junction) | 40 - 307-503-0003 (Flow Zone)       |
| 26 - 312-510-0007 (Bromance)            | 41 - 307-505-0011 (Guitar Solo)     |

- # Greater Gliders found (coupe logged)
- Greater Gliders found (coupe scheduled)
- Greater Gliders found \*FLBP court case (coupe scheduled)
- VicForests' scheduled logging coupes (2017 to 2019)
- Central Highlands Regional Forest Agreement Area
- Conservation Parks and Reserves
- Public Forests

GDA94/MGA Zone 55



1:700000



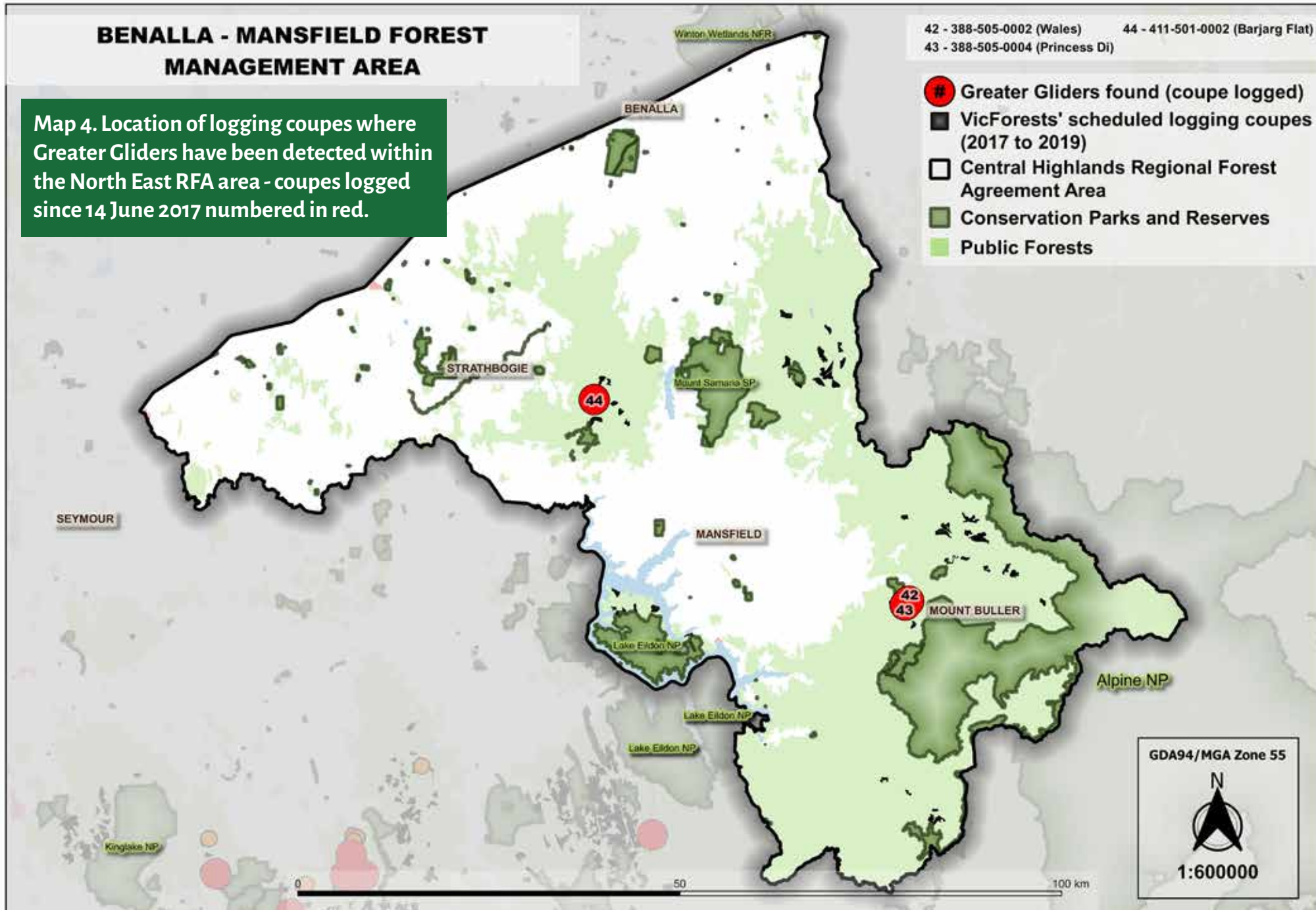


# BENALLA - MANSFIELD FOREST MANAGEMENT AREA

Map 4. Location of logging coupes where Greater Gliders have been detected within the North East RFA area - coupes logged since 14 June 2017 numbered in red.

42 - 388-505-0002 (Wales)      44 - 411-501-0002 (Barjarg Flat)  
43 - 388-505-0004 (Princess Di)

-  Greater Gliders found (coupe logged)
-  VicForests' scheduled logging coupes (2017 to 2019)
-  Central Highlands Regional Forest Agreement Area
-  Conservation Parks and Reserves
-  Public Forests



**Table 1. Logging coupes where Greater Gliders have been detected that have been logged since 14 June 2017**

	RFA area	Location	Coupe number	Date of survey	No. Greater Gliders detected	Organisation reporting detections	Date coupe logged on VicForests record / (logging detected by community groups)	Area logged (ha)*
1	East Gippsland	Bonang	893-501-0006	11/12/2017	1	VicForests	Mar - Apr 2018	14
2	East Gippsland	CottonwoodRange	895-513-0018	16/05/2016	1	VicForests	(Dec 2018)	17
3	East Gippsland	CottonwoodRange	895-513-0020	N/A	1	Vicforests	(Dec 2018)	30
4	East Gippsland	Granite Mt	886-502-0014	18/03/2019	5	GECO	(Mar 2019)	18
5	East Gippsland	Granite Mt	889-504-0011	6/02/2019	3	FCV	(Jan 2019)	8
6	East Gippsland	Orbost	832-501-0018	11/05/2017	1	GECO	(May 2018)	20
7	East Gippsland	Queensborough	892-507-0006	1/02/2017	7	VicForests	Feb 2018	7
8	East Gippsland	Queensborough	892-507-0020	10/03/2018	8	FFRC	(Mar 2018)	31
9	East Gippsland	Queensborough	892-507-0021	10/03/2018	5	FFRC	Apr - May 2018	8
10	East Gippsland	Queensborough	892-517-0007	21/03/2019	5	DELWP	(Apr 2019)	N/A
11	Gippsland	Tambo	735-510-0021	27 & 28/2/2017	3	GEG	(Oct 2018)	N/A
12	Central Highlands	Acheron	309-507-0003	5/06/2017	3	FFRC	Jun 2017 - Jun 2018	13
13	Central Highlands	Baw Baw	461-501-0002	14/05/2018	6	WOTCH	May - Jun 2018	9
14	Central Highlands	Baw Baw	461-501-0004	14/05/2018	2	WOTCH	May - Jun 2018	6
15	Central Highlands	Baw Baw	483-501-0016	15/04/2018	2	WOTCH	(Nov 2018)	18
16	Central Highlands	Baw Baw	483-504-0001	15/04/2018	1	WOTCH	Apr - Jun 2018	2
17	Central Highlands	Baw Baw	483-504-0015	16 - 22/05/17	2	FFRC & WOTCH	Apr 2017 - Jun 2018	15
18	Central Highlands	Baw Baw	483-505-0002	16 - 22/05/17	1	FFRC & WOTCH	Apr 2017 - Jun 2018	8
19	Central Highlands	Baw Baw	484-501-0001	25/05/2018	7	WOTCH	May - Jun 2018	10
20	Central Highlands	Baw Baw	484-501-0002	26/05/2018	5	WOTCH	(May 2019 - ongoing)	N/A
21	Central Highlands	Baw Baw	484-501-0026	15/05/2018	5	WOTCH	May - Jul 2018	33
22	Central Highlands	Baw Baw	484-501-0037	26/09/2018	4	DELWP	Sep 2017 - Jun 2018	10
23	Central Highlands	Baw Baw	484-501-0043	22/06/2018	3	WOTCH	(Sep 2018)	31
24	Central Highlands	Baw Baw	484-504-0003	28/08/2018	2	WOTCH	(Nov 2018)	11
25	Central Highlands	Cambarville	290-527-0004	16 & 24/12/17	2	WOTCH	Feb - Apr 2018	21
26	Central Highlands	Cambarville	312-510-0007	14/01/2018	5	WOTCH	Jan - Mar 2018	19



27	Central Highlands	Cambarville	312-510-0009	6/01/2018	2	WOTCH	Jan - Mar 2018	12
28	Central Highlands	Cambarville	317-508-0009	23/02/2018	2	WOTCH	Mar - Jun 2018	10
29	Central Highlands	Cambarville	317-508-0010	17/02/2018	4	WOTCH	Mar - Jun 2018	3
30	Central Highlands	Kinglake	295-539-0001	11/03/2019	8	DELWP	(May 2019 - ongoing)	N/A
31	Central Highlands	Noojee	461-503-0009	7/05/2019	3	WOTCH	(May 2019 - ongoing)	N/A
32	Central Highlands	Noojee	462-502-0001	16/11/2017	7	WOTCH	May 2017 - Jan 2018	37
33	Central Highlands	Noojee	462-504-0004	6/02/2018	8	WOTCH	Feb - Mar 2018	13
34	Central Highlands	Powelltown	347-515-0002	22/01/2019	7	WOTCH	(Feb 2019)	N/A
35	Central Highlands	Powelltown	347-515-0012	20/12/2017	1	WOTCH	Jan - April 2018	22
36	Central Highlands	Toolangi	297-501-0001	4/12/2012	11	WOTCH	(May 2019 - ongoing)	N/A
37	Central Highlands	Toolangi	298-502-0002	20/09/2018	4	DELWP	Need info f WOTCH	14
38	Central Highlands	Toolangi	298-516-0001	9/06/2017	5	WOTCH	Sep - Nov 2017	30
39	Central Highlands	Toolangi	298-519-0003	8/04/2017	3	WOTCH	Jul 2017 - Jun 2018	20
40	Central Highlands	Toolangi	307-503-0003	12/10/2017	3	WOTCH	Oct 2017 - Jun 2018	2
41	Central Highlands	Toolangi	307-505-0011	18/08/2017	7	FFRC & WOTCH	Aug - Oct 2017	16
42	North East	Benalla-Mansfield	388-505-0002	8/12/2018	3	DELWP	Jan - June 2018	9
43	North East	Benalla-Mansfield	388-505-0004	7/12/2018	2	DELWP	Mar 2016 - June 2018	13
44	North East	Strathbogie Ranges	411-501-0002	1/10 to 31/12/17	22	ARI	Feb - Apr 2018	42
<b>TOTALS</b>					<b>192</b>			<b>602</b>

\* The area logged figures in Table 1 has been calculated using DELWP's logging history spatial datasets and in some cases, such as recently logged coupes where this information is not yet available, measured on the ground by community groups and/or via satellite imagery. Area logged is recorded as N/A for coupes that are currently being logged or where data is not available.

Our investigation found **44 logging coupes**, where a total of **192 Greater Gliders** have been detected, that have been logged since the species was listed as threatened in Victoria on 14 June 2017.

Analysis confirms that a conservative estimate of at least **602 ha of documented Greater Glider habitat** has been logged to date – this total excludes 5 coupes where logging is ongoing at the time of this report and 2 coupes where data was not available.

**Table 2. Logging coupes where Greater Gliders have been detected that are scheduled for logging**

	RFA	Location	Coupe number	Date of survey	No. Greater Gliders detected	Organisation reporting detections	Coupe scheduled on VicForests TRP 2019*	Coupe listed on VicForests THSZ*	Gross coupe size (ha)**	Net coupe size (ha)***
1	East Gippsland	Bonang	893-503-0018	10/03/2018	2	GECO	YES		42	15
2	East Gippsland	Bonang	893-503-0019	10/03/2018	9	GECO	YES		43	35
3	East Gippsland	Bonang	893-503-0020	5/11/2018	7	GECO	YES		18	16
4	East Gippsland	Bonang	893-503-0021	20/08/2017	6	GECO	YES		42	39
5	East Gippsland	Cann River	885-506-0009	6/12/2010	1	VicForests	YES		38	28
6	East Gippsland	Coast Range Rd	886-509-0012	5/05/2015	11	GECO & FFRC	YES		21	11
7	East Gippsland	Coast Range Rd	894-509-0009	25/01/2016	15	GECO & FFRC	YES		27	26
8	East Gippsland	Cottonwood Range	890-508-0001	21/04/2017	5	GECO & FFRC	YES		23	11
9	East Gippsland	Cottonwood Range	890-508-0018	21/04/2017	6	GECO	YES		45	38
10	East Gippsland	Cottonwood Range	895-504-0005	22/01/2017	4	GECO	YES		26	6
11	East Gippsland	Cottonwood Range	895-505-0011	6/08/2016	5	GECO & FFRC	YES		43	38
12	East Gippsland	Cottonwood Range	895-505-0012	12/08/2016	12	GECO & FFRC	YES		31	28
13	East Gippsland	Cottonwood Range	895-505-0013	12/08/2016	3	GECO & FFRC	YES		26	25
14	East Gippsland	Cottonwood Range	895-505-0015	7/08/2016	9	GECO & FFRC	YES		40	37
15	East Gippsland	Cottonwood Range	895-508-0002	21/04/2017	5	GECO & FFRC	YES		19	17
16	East Gippsland	Goongerah	891-507-0005	4/09/2018	1	DELWP	YES	YES	33	11
17	East Gippsland	Goongerah	891-509-0008	11/12/2017	1	VicForests	YES		43	26
18	East Gippsland	Nowa Nowa	806-501-0017	8/04/2019	4	DELWP	YES		31	28
19	East Gippsland	Nowa Nowa	806-501-0019	11/04/2019	3	DELWP	YES		37	34
20	East Gippsland	Nowa Nowa	816-509-0007	9/05/2017	2	VicForests	YES		33	25
21	East Gippsland	Nowa Nowa	817-501-0015	8/05/2014	1	VicForests	YES		8	6
22	East Gippsland	Queensborough	892-507-0014	11/03/2018	5	GECO & FFRC	YES		46	33
23	East Gippsland	Queensborough	892-507-0015	11/03/2018	17	GECO	YES		39	34
24	East Gippsland	Queensborough	892-507-0022	11/03/2018	1	GECO	YES		41	28



25	East Gippsland	Queensborough	892-507-0023	10/03/2018	4	FFRC	YES		34	13
26	East Gippsland	Queensborough	892-508-0005	13/12/2017	4	DELWP	YES		30	2
27	East Gippsland	Queensborough	892-509-0005	31/10/2016	3	GECO	YES		41	25
28	East Gippsland	Queensborough	892-514-0004	14/12/2017	5	VicForests	YES		76	20
29	East Gippsland	Queensborough	892-515-0005	22/11/2017	2	VicForests	YES		35	21
30	East Gippsland	Queensborough	892-515-0011	22/11/2017	3	VicForests	YES		36	26
31	East Gippsland	Queensborough	892-517-0012	1/05/2019	18	DELWP	YES	YES	58	48
32	East Gippsland	Queensborough	892-519-0010	27/01/2019	10	GECO	YES		30	30
33	East Gippsland	Queensborough	892-519-0011	13/12/2017	1	VicForests	YES		64	13
34	East Gippsland	Tingaringy	902-501-0010	14/02/2017	2	GECO	YES		31	26
35	East Gippsland	Tingaringy	902-501-0011	14/02/2017	5	GECO	YES		40	29
36	East Gippsland	Tingaringy	902-502-0001	10/11/2017	1	VicForests	YES		23	22
37	Gippsland	Heyfield	526-501-0003	4/12/2018	1	DELWP	YES		50	19
38	Gippsland	Swifts Creek	764-507-0003	4/12/2018	1	VicForests	YES		29	19
39	Gippsland	Swifts Creek	766-503-0022	14/11/2017	1	VicForests	YES		28	2
40	Gippsland	Swifts Creek	766-503-0028	14/11/2017	1	VicForests	YES	YES	39	22
41	Gippsland	Swifts Creek	767-505-0002	15/11/2017	4	VicForests	YES		39	8
42	Gippsland	Swifts Creek	770-507-0016	16/10/2017	1	VicForests	YES		41	37
43	Gippsland	Swifts Creek	771-507-0028	15/11/2017	4	VicForests	YES		33	26
44	Gippsland	Swifts Creek	774-504-0001	8/12/2018	1	VicForests	YES		34	20
45	Gippsland	Swifts Creek	775-504-0013	10/12/2018	1	VicForests	YES	YES	31	11
46	Gippsland	Swifts Creek	779-502-0026	6/12/2018	2	VicForests	YES	YES	32	20
47	Gippsland	Tambo	722-505-0011	8/04/2019	3	DELWP	YES		9	9
48	Gippsland	Tambo	739-510-0014	30/01/2019	1	DELWP	YES		38	21
49	Gippsland	Tambo	743-501-0009	19/10/2018	1	DELWP	YES		31	23
50	Gippsland	Tambo	743-502-0001	21/02/2019	1	DELWP	YES		22	22
51	Gippsland	Tambo	743-502-0006	15/01/2019	1	DELWP	YES		25	25
52	Gippsland	Tambo	735-520-0010	27/7/2018	1	GEG	YES		38	17
53	CentralHighlands	Alexandra	282-512-0007	6/02/2019	2	DELWP	YES		48	30
54	CentralHighlands	Baw Baw	483-501-0011	20/02/2019	1	DELWP	YES		21	17

**Table 2. Logging coupes where Greater Gliders have been detected that are scheduled for logging - continued**

	RFA	Location	Coupe number	Date of survey	No. Greater Gliders detected	Organisation reporting detections	Coupe scheduled on VicForests TRP 2019*	Coupe listed on VicForests THSZ*	Gross coupe size (ha)**	Net coupe size (ha)***
55	CentralHighlands	Baw Baw	484-504-0002	22/01/2019	2	DELWP	YES	YES	41	28
56	Central Highlands	Baw Baw	485-507-0013	18/02/2019	1	DELWP	YES	YES	30	17
57	Central Highlands	Kinglake	295-536-0021	11/11/2018	1	WOTCH	YES		28	13
58	Central Highlands	Kinglake	295-548-0020	5/01/2019	12	WOTCH	YES		43	25
59	Central Highlands	Noojee	457-501-0030	6/12/2018	10	DELWP	YES		38	20
60	Central Highlands	Noojee	460-504-0009	29/10/2018	2	DELWP	YES		101	50
61	Central Highlands	Noojee	460-510-0034	12/12/2018	5	DELWP	YES		44	27
62	Central Highlands	Noojee	460-510-0035	19/02/2019	1	DELWP	YES		38	27
63	Central Highlands	Noojee	462-504-0002	11/12/2018	2	DELWP	YES		29	17
64	Central Highlands	Noojee	462-504-0006	2/11/2018	3	DELWP	YES		45	35
65	Central Highlands	Noojee	462-505-0034	8/10/2018	1	DELWP	YES		90	57
66	Central Highlands	Noojee	462-505-0038	1/11/2018	3	DELWP	YES		27	13
67	Central Highlands	Noojee	462-506-0016	11/12/2018	7	DELWP	YES	YES	31	19
68	Central Highlands	Noojee	462-511-0012	25/09/2018	6	DELWP	YES		47	32
69	Central Highlands	Noojee	464-505-0044	12/02/2019	1	DELWP	YES		23	19
70	Central Highlands	Powelltown	344-520-0003	12/10/2018	N/A	DELWP	YES	YES	34	18
71	Central Highlands	Powelltown	349-502-0014	14/11/2018	1	DELWP	YES		44	20
72	Central Highlands	Powelltown	349-509-0003	25/08/2018	4	WOTCH	YES		44	20
73	Central Highlands	Powelltown	349-511-0015	30/10/2018	1	DELWP	YES		47	28
74	Central Highlands	Toolangi	295-518-0003	5/03/2019	2	DELWP	YES	YES	14	8
75	Central Highlands	Toolangi	297-501-0005	10/01/2019	6	DELWP	YES	YES	47	6
76	Central Highlands	Toolangi	297-501-0006	6/12/2018	9	WOTCH	YES	YES	35	27
77	Central Highlands	Toolangi	297-517-0001	11/02/2019	3	DELWP	YES		33	26
78	Central Highlands	Toolangi	297-520-0001	10/01/2019	2	DELWP	YES		26	20



79	Central Highlands	Toolangi	298-516-0002	27/12/2017	13	WOTCH	YES	52	31
80	Central Highlands	Toolangi	298-516-0003	27/12/2017	6	WOTCH	YES	40	19
81	Central Highlands	Toolangi	298-519-0005	9/11/2017	5	WOTCH	YES	14	10
82	Central Highlands	Toolangi	298-526-0001	17/01/2019	4	DELWP	YES	33	30
83	Central Highlands	Toolangi	298-526-0002	16/01/2019	3	DELWP	YES	40	34
84	Central Highlands	Toolangi	298-526-0003	19/01/2019	2	DELWP	YES	28	12
85	Central Highlands	Toolangi	307-505-0012	21/07/2017	14	FFRC	YES	37	28
86	North East	Upper Murray	687-506-0004	8/01/2019	2	DELWP	YES	39	11
<b>TOTALS</b>					<b>355</b>			<b>3,138</b>	<b>1,965</b>

\* All coupes that are available for logging are listed on VicForests TRP April 2019. Coupes that are likely to be logged in the near future are then designated a Timber Harvesting Safety Zone (THSZ). However, in some cases a THSZ is designated only immediately prior to logging commencing.

\*\*Gross coupe size indicates the total area of the coupe available for logging defined by the coupe boundary, as recorded on VicForests TRP.

\*\*\*Net coupe size indicates the approximate area expected to be logged within the coupe boundary, as recorded on VicForests TRP

Our investigation found **86 logging coupes**, where a total of **355 Greater Gliders** have been detected, that are currently scheduled for logging. The total number of Greater Glider detections excludes one DELWP survey where detection numbers were not reported.

VicForests report that the net **area planned to be logged within these coupes is 1,965 ha.**

**Table 3. Logging coupes where Greater Gliders have been detected that are scheduled for logging where logging is temporarily on hold due to the Federal Court case Friends of Leadbeater's Possum v VicForests**

	RFA area	Location	Coupe number	Date of survey	No. Greater Gliders detected	Organisation reporting detections	Coupe scheduled on VicForests TRP 2019*	Coupe listed on VicForests THSZ*	Gross coupe size (ha)**	Net coupe size (ha)***
1	Central Highlands	Royston	288-505-0001	6/07/2018	7	WOTCH	YES		37	12
2	Central Highlands	Cambarville	290-525-0002	24 & 30/12/17	4	WOTCH	YES	YES	43	20
3	Central Highlands	Toolangi	297-505-0001	13/09/2017	1	WOTCH	YES		43	21
4	Central Highlands	Toolangi	297-509-0001	2/07/2018	5	WOTCH	YES	YES	23	11
5	Central Highlands	Toolangi	297-509-0002	16/08/17 & 02/7/18	2	WOTCH	YES		38	31
6	Central Highlands	Toolangi	297-511-0002	16/08/17 & 02/7/18	2	WOTCH	YES		32	18
7	Central Highlands	Toolangi	297-530-0001	1/09/2017	4	WOTCH	YES	YES	45	34
8	Central Highlands	Toolangi	297-530-0002	1/09/2017	2	WOTCH	YES		35	19
9	Central Highlands	Toolangi	297-538-0004	1/09/2017	4	WOTCH	YES		41	27
10	Central Highlands	Toolangi	298-502-0003	24/01/2017	12	WOTCH	YES	YES	47	21
11	Central Highlands	Toolangi	298-509-0001	9/09/2017	3	WOTCH	YES	YES	32	29
12	Central Highlands	Toolangi	298-510-0003	3/10/2017	21	WOTCH	YES	YES	39	28
13	Central Highlands	Toolangi	307-505-0001	17/06/2017	4	WOTCH	YES		36	14
14	Central Highlands	Toolangi	307-505-0009	17/06/2017	8	FFRC	YES		46	26
15	Central Highlands	Toolangi	307-505-0010	17/06/2017	3	FFRC	YES		36	27
16	Central Highlands	Acheron	309-507-0007	5/06/2017	1	FFRC	YES		44	32
17	Central Highlands	Cambarville	312-002-0006	6/11/2017	14	WOTCH	YES	YES	26	20
18	Central Highlands	Cambarville	312-007-0014	5/11/2017	4	WOTCH	YES		47	33
19	Central Highlands	Cambarville	312-503-0002	30/05/2017	5	WOTCH	YES		38	20
20	Central Highlands	Cambarville	312-508-0002	5/11/2017	9	WOTCH	YES		17	13
21	Central Highlands	Ada	345-504-0003	21/06 & 22/08/17	4	WOTCH	YES		48	31
22	Central Highlands	Ada	345-504-0005	30/05/2018	3	WOTCH	YES		40	13
23	Central Highlands	Ada	345-505-0006	3/07/2018	3	WOTCH	YES	YES	46	34



24	Central Highlands	Ada	345-505-0009	17/09/2017	3	WOTCH	YES		18	14
25	Central Highlands	Ada	348-504-0005	13/08/2017	3	WOTCH	YES		25	15
26	Central Highlands	Ada	348-518-0004	19/08/2017	3	WOTCH	YES		34	25
27	Central Highlands	Ada	348-519-0008	10/09/2017	3	WOTCH	YES		43	32
28	Central Highlands	Noojee	462-504-0008	7/03/2018	8	WOTCH	YES		20	14
29	Central Highlands	Noojee	462-504-0009	7/10/2017	12	WOTCH	YES	YES	35	24
30	Central Highlands	Noojee	462-506-0019	23/01/2018	3	WOTCH	YES		33	18
31	Central Highlands	Noojee	462-507-0009	10/07/2017	11	WOTCH	YES		40	22
32	Central Highlands	Noojee	462-512-0002	29/10/2017	5	WOTCH	YES	YES	55	36
33	Central Highlands	Baw Baw	483-505-0018	2/09/2017	3	WOTCH	YES		46	17
<b>TOTALS</b>					<b>179</b>				<b>1,225</b>	<b>751</b>

\* All coupes that are available for logging are listed on VicForests TRP April 2019. Coupes that are likely to be logged in the near future are then designated a Timber Harvesting Safety Zone (THSZ). However, in some cases a THSZ is designated only immediately prior to logging commencing.

\*\*Gross coupe size indicates the total area of the coupe available for logging defined by the coupe boundary, as recorded on VicForests TRP.

\*\*\*Net coupe size indicates the approximate area expected to be logged within the coupe boundary, as recorded on VicForests TRP.

Our investigation found an additional **33 logging coupes**, where a total of **179 Greater Gliders** have been detected, that are currently scheduled for logging, however logging is temporarily on hold due to these areas being subject to legal proceedings in the Federal Court case *Friends of Leadbeater's Possum v VicForests* (discussed in Part 4 of this report). Where Greater Glider detections were recorded as >20 in coupe 298-510-0003, the number used in the total was 21.

VicForests report that the net **area planned to be logged within these coupes is 751 ha.**

## Summary of findings

Logging of Greater Glider habitat over the past two decades has significantly contributed to the decline of the species. Despite the FFG Act listing of the Greater Glider two years ago, logging continues across Victoria.

This report investigated **163 logging coupes** where VicForests, DELWP and/or community groups have detected Greater Gliders. **44 of these coupes comprising 192 Greater Glider detections have been logged** since the species was listed as threatened. Within these coupes at least **602 ha of Greater Glider habitat has been logged**.

**119 coupes comprising 534 Greater Glider detections are scheduled for logging**, with **33 of these coupes** currently on hold while court proceedings take place. Within these coupes, an estimated **2,716 ha of forest** is planned for logging. Logging is currently on hold in **751 ha of this forest** due to court proceedings.

Our investigation found **163 logging coupes comprising 726 Greater Glider detections**,

representing an estimated area of **3,318 ha of Glider habitat that has been logged or is scheduled for logging**.

It is important to remember that the number of Gliders detected represents a fraction of Gliders present in each coupe, as detection rates are generally much lower than actual abundance.

Furthermore, there are many more areas where Greater Gliders persist that were not examined in this report because surveys for Gliders have not been carried out, or surveys were carried out by other community groups that were beyond the scope of this report to include.

Considering that the home range of the Greater Glider is 1–4 ha, this habitat represents the actual and potential home ranges of many hundreds of Gliders.

Considering it takes up to 190 years for trees to develop hollows of large enough size for use by the Greater Glider, the loss of this habitat can be considered permanent in terms of the Glider's prospects for survival.

**Table 4. Summary of findings**

	No. of coupes	No. of Greater Gliders detected	Area logged / net area scheduled for logging (ha)
<b>Logged</b>	44	192	602
<b>Scheduled</b>	86	355	1,965
<b>Scheduled (in court case)</b>	33	179	751
<b>Scheduled subtotal</b>	119	534	2,716
<b>Total</b>	163	726	3,318



Logged old growth forest and Greater Glider habitat at Granite Mountain, East Gippsland. coupe 889-504-0011, logged in March 2019.



## Discussion

These findings paint a bleak future for the Greater Glider and demonstrate a failure to protect the Glider from logging at multiple levels of intervention.

They also present a significant opportunity for intervention to halt the controllable threat of logging and increase the species' chances of survival.

The coupes presented in this report include instances where logging was allowed to proceed in Greater Glider habitat where:

- VicForests and DELWP failed to survey for Greater Gliders.
- VicForests and DELWP failed to detect high densities of Greater Gliders in East Gippsland that would trigger protection, even where high densities have been found by community groups.
- Forest containing a high density of Greater Gliders has been purposely logged and labelled as 'research'.
- Low quality habitat has been

protected in response to high densities of Greater Gliders being found, while high quality habitat has continued to be logged.

- High densities of Greater Gliders have been reported to DELWP outside East Gippsland (where regulations for their protection do not exist) including one coupe where 22 Gliders were detected.

Logging that is scheduled in Greater Glider habitat presented in this report includes instances where:

- VicForests and DELWP have not conducted surveys for Greater Gliders.
- High densities of Greater Gliders have been reported to DELWP in East Gippsland that should trigger protection but protection zones have not yet been implemented.
- High densities of Greater Gliders have been reported to DELWP outside East Gippsland (where regulations for their protection do not exist) including one coupe where more than 20 Gliders were detected.



Greater Glider. PHOTO: Caleb McElrea

While it is emphasised here that forest containing high densities of Greater Gliders are being logged and scheduled across Victoria, even when regulations exist for the protection of their habitat (in East Gippsland), it is important to point out that the rapid decline of the species and the ongoing threat to their survival requires the protection of *all* Greater Glider habitat, including where the Glider is found in low numbers, particularly to decrease the likelihood of local extinctions.

Considering the current failure at these different levels of intervention, the Minister and DELWP have many opportunities to step in and provide greater protection for the Greater Glider – even under current regulations. For example, the Minister could take action to ensure that high densities of Greater Gliders detected by community groups are protected in East Gippsland.

However, the Minister and the Secretary also have the opportunity to intervene to halt logging in Greater Glider habitat independent of the detection of high densities and are in fact legally obligated to ensure VicForests complies with the Code by applying the precautionary principle.

### The precautionary principle

As a threatened species listed under the FFG Act, the Greater Glider requires an Action Statement outlining how the species will be protected from threats, including logging. As this Action Statement is still in development, and the threat of logging is ongoing, this presents the precise moment where the Minister's power under the Code to apply the precautionary principle would be most opportune and effective.

Following the Code, that states *the precautionary principle must be applied to the conservation of biodiversity values*,<sup>53</sup> the Minister could immediately step in to halt logging where it is occurring in Greater Glider habitat, as no management options have been developed for the Glider since it was listed as a threatened species.

Under the FFG Act, the Secretary can declare critical habitat for the Greater Glider and the Minister can issue an Interim Conservation Order to stop logging within the critical habitat. Under the *Sustainable Forests (Timber) Act 2004*, the Minister can request her Department to issue a direction to VicForests to apply the precautionary

principle by refraining from logging in areas where the Greater Glider has been found or where its habitat is likely to exist.

As regulator of the logging industry, the Minister can require her Department to enforce the Code, ensuring VicForests operate in accordance with the precautionary principle by choosing management options that avoid serious or irreversible damage to the Greater Glider and its habitat, and by prosecuting VicForests where it fails to do so.



**'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.

A hollow-bearing tree logged in East Gippsland and left on the ground (top). Definition of the precautionary principle as stated in the Code of Practice for Timber Production (bottom).



## PART 3. Case studies - logged coupes

### 1. Cottonwood Range (Cottonwood Range Rd) – a stronghold for Greater Gliders logged

**Surveyed by:** VicForests

**RFA area:** East Gippsland

**Coupe numbers:** 895-513-0018, 895-513-0023, 895-513-0020

**Logging detected:** November 2018

**Greater Gliders detected:** 2

Cottonwood Range is known as a stronghold for Greater Gliders. Located at high altitude approximately 1,000 m above sea level where conditions favour the Glider's habitat, remaining unlogged forest contains an abundance of large hollow-bearing trees and several species preferred by the Greater Glider for feeding (for example, *E. fastigata*).

VicForests found one Greater Glider in coupe 895-513-0018 and one in coupe 895-513-0020. Given the systemic failure of VicForests to conduct appropriate pre-logging surveys, GECO raised concerns with DELWP and asked if a survey was planned as part of DELWP's survey program.

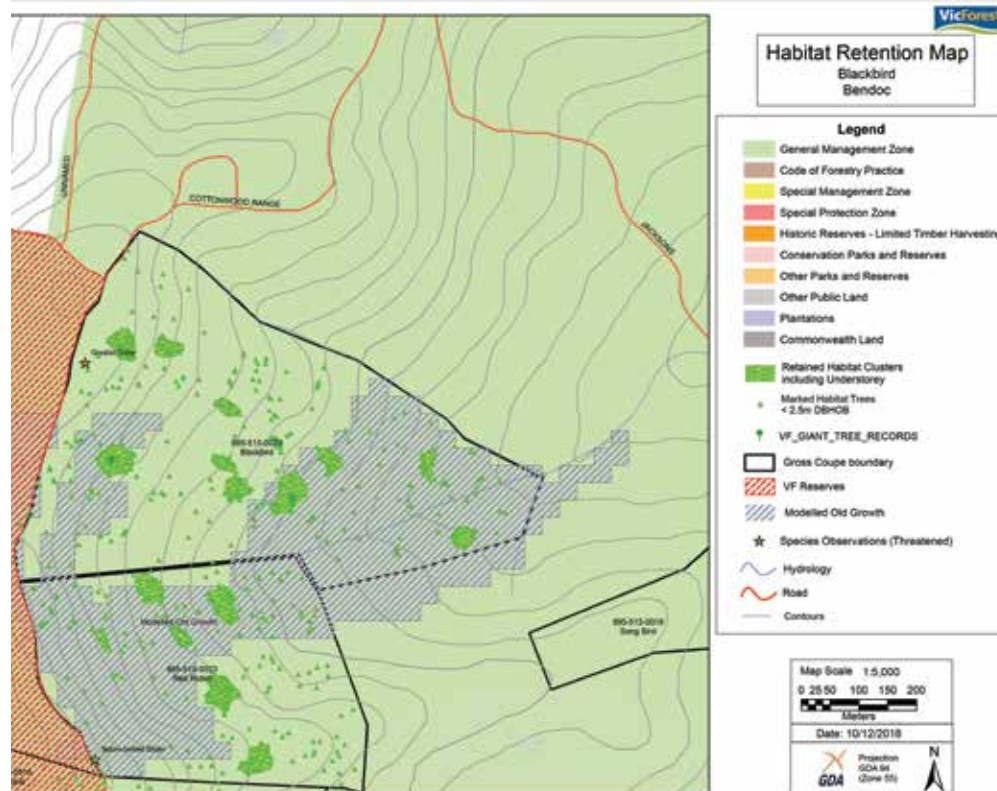
GECO alerted DELWP to the fact that the three coupes contained hollow-

bearing trees and old growth forest identified in the government's own records of Modelled Old Growth; the forest within the coupes scored 10 out of 10 for habitat quality on DELWP's own Greater Glider Habitat Distribution Model; and all were situated in a known hotspot for Greater Gliders.

DELWP confirmed that none of the three coupes were identified to be surveyed for Greater Gliders in line with their commitment to survey 80% of coupes.

Despite very high quality habitat and a high likelihood of Greater Glider presence in these coupes, DELWP chose to allow logging without a pre-logging survey for Greater Gliders.

The forest after logging in coupe 895-513-0018. Large hollow-bearing trees that stand in the background give an idea of the habitat that has been lost (top). VicForests' map for coupe 895-513-0023 and 895-513-0020. Modelled Old Growth is shown in blue. A Greater Glider detection is shown as a yellow star. Retained areas are shown in green – they do not cover the Glider detection or the majority of Modelled Old Growth (bottom).





## 2. Queensborough – VicForests Greater Glider killing experiment

**Surveyed by:** FFRC, GECO, DELWP, VicForests

**RFA area:** East Gippsland

**Logging coupe number:** 892-507-0020

**Logging detected:** March 2018

**Greater Gliders detected:** FFRC and GECO 8, DELWP 10, VicForests 4

Just south-east of Cottonwood Range, the forest of the Queensborough River catchment is another hotspot for Greater Gliders at high altitude of 940 m above sea level. This forest contains Greater Glider's preferred feed-trees (including *E. fastigata*) and large hollow-bearing trees.

Shortly after logging operations were detected in coupe 892-507-0020 in March 2018, FFRC and GECO surveys detected high numbers of Gliders in and around the coupe at a density of 11 Gliders within 1 km and 2.03 Gliders per ha. This density should have triggered protection.

Logging continued for three days after the high density Glider population was reported to DELWP, destroying the locations of three detections. DELWP

then conducted a verification survey that recorded 10 Gliders in 1 km, one glider short of meeting the threshold for protection.

GECO requested DELWP conduct a second verification survey in light of the results of the first survey falling marginally short of protection requirements. DELWP did not conduct a second survey and allowed logging to recommence.

It was subsequently discovered that VicForests was conducting so-called *Greater Glider Research* inside the coupe whereby logging of Greater Glider habitat was being conducted to determine its impact on the Glider.<sup>54</sup>

When VicForests manager of biodiversity conservation Tim McBride was asked by *ABC News* if Gliders would die during the experiment, his response was, *Yep, that's a very likely outcome.*<sup>55</sup>

Leading Greater Glider expert Professor David Lindenmayer described the experiment as *the terrestrial equivalent of so called scientific whaling*, stating that we don't need to go back and investigate the impact of logging on Greater Gliders when we already see

quite clearly what the impacts are.<sup>56</sup>

A well-documented unequivocal body of research exists demonstrating that logging results in the death of Greater Gliders shortly after logging operations, if not directly during operations or post-logging burns (as outlined in Part 1 of this report).

Mr McBride told *ABC News* the existing body of research was not balanced because it was *all about preservation.*<sup>57</sup>

Greater Gliders detected by FFRC and GECO in and around coupe 892-507-0020 (right) and the coupe after logging (below).





VicForests' own 'research' appears problematic. Two problems that stand out are that the methodology lacks baseline data for the area before and after logging, and the independence of the study is questionable. VicForests using permanent employed staff to conduct the 'research' is a clear conflict of interest. The government's ecological research body, the ARI, raised concerns about the experiment's sampling design, underlying assumptions and ability to be able to draw valid conclusions.<sup>58</sup>

In 2018 it was discovered that this coupe lies outside the Allocation Order of forest that the Victorian Government has designated to VicForests for logging, which brings into question the legality of logging this forest at all.<sup>59</sup>



A logged hollow-bearing tree found inside the coupe (top). A satellite image of VicForests Greater Glider experiment coupe with FFRC / GECO Greater Glider detection sites shown as red dots, VicForests Greater Glider detection as red squares (bottom right). Verifying that a Greater Glider detection site has been logged using GPS (left).



### 3. Queensborough River – logging in progress at the time of this report

**Surveyed by:** DELWP

**RFA area:** East Gippsland

**Logging coupe number:** 892-517-0007

**Logging detected:** May 2019

**Greater Gliders detected:** 5

Also found in the Greater Glider hotspot of Queensborough River, coupe 892-517-0007 is located in a remnant patch of old growth forest within a heavily logged landscape. The coupe itself has no recorded logging history. It is therefore an extremely important refuge for Greater Gliders as it has an abundance of large hollow-bearing trees in contrast to the surrounding logged forest.

A high density population of Greater Gliders was identified by GECO surveys directly south of this coupe in 2016. The population was reported to DELWP who implemented a legally required 100 ha protection zone.

However, rather than protecting 100 ha of the best quality habitat, DELWP's protection zone excluded half of the coupe where high quality Greater Glider habitat is located.

Included within the protection zone is approximately 10 ha of land that was logged between 2014 and 2015 that will not form hollow-bearing trees for approximately 120 years (if at all) and is therefore not viable habitat for Greater Gliders. This appears to be inconsistent with the regulatory requirement to place special protection zones over suitable habitat.

At the time of this report, logging was occurring within the coupe in the area where DELWP surveys located 5 Greater Gliders.

A Powerful Owl roost tree and a pair of Masked Owls were also observed by DELWP surveys. This highlights the importance of the forest for hollow dependent fauna such as the Powerful Owl itself and the Greater Glider that is likely to be providing an important food source for large forest owls.

Logging just commenced in coupe 892-517-0007 that is cutting into the small patch of old growth forest that exists in the area - seen below the white line - in contrast to younger surrounding forest (top). A large tree logged and left dumped in the coupe; hollow-bearing trees inside the coupe can be seen in the background (bottom).





#### 4. Granite Mountain – existing high density records ignored, old growth logged

**Surveyed by:** FCV

**RFA area:** East Gippsland

**Logging coupe number:** 889-504-0011

**Logging detected:** January 2019

**Greater Gliders detected:** 3

Granite Mountain lies at an altitude of 950 m above sea level, contains Greater Glider preferred feed-tree species (including *E. fastigata*) and an abundance of large hollow-bearing trees where the forest has not been logged.

This coupe was within 500 m of existing Greater Glider records and within 2 km of a known high density population of Greater Gliders. 75% of the coupe had never been logged and contained a very high abundance of hollow-bearing trees.

When asked if spotlighting surveys would be conducted in the coupe DELWP stated that they would not due to a low probability of detecting Greater Gliders.

DELWP's Greater Glider Habitat

Distribution Model shows the forest in the southern half of coupe 889-504-001 scoring 7, 8, 9 and 10 out of 10 for high quality Greater Glider habitat.

After DELWP confirmed with GECO it would not conduct any surveys for Greater Gliders, volunteers conducted their own surveys whilst logging operations were active.

In the short amount of time available for surveying, three Greater Gliders were detected in the coupe, demonstrating that Greater Gliders were present at the time of logging and likely in higher numbers before.



Logging just commenced (above). Major damage to the hill slope, the forest seen above the slope has now been logged - a person is circled for scale (top right). Logged trees developing a central hollow dumped in the coupe (bottom right).





## 5. Granite Mountain – important refuge of old growth logged

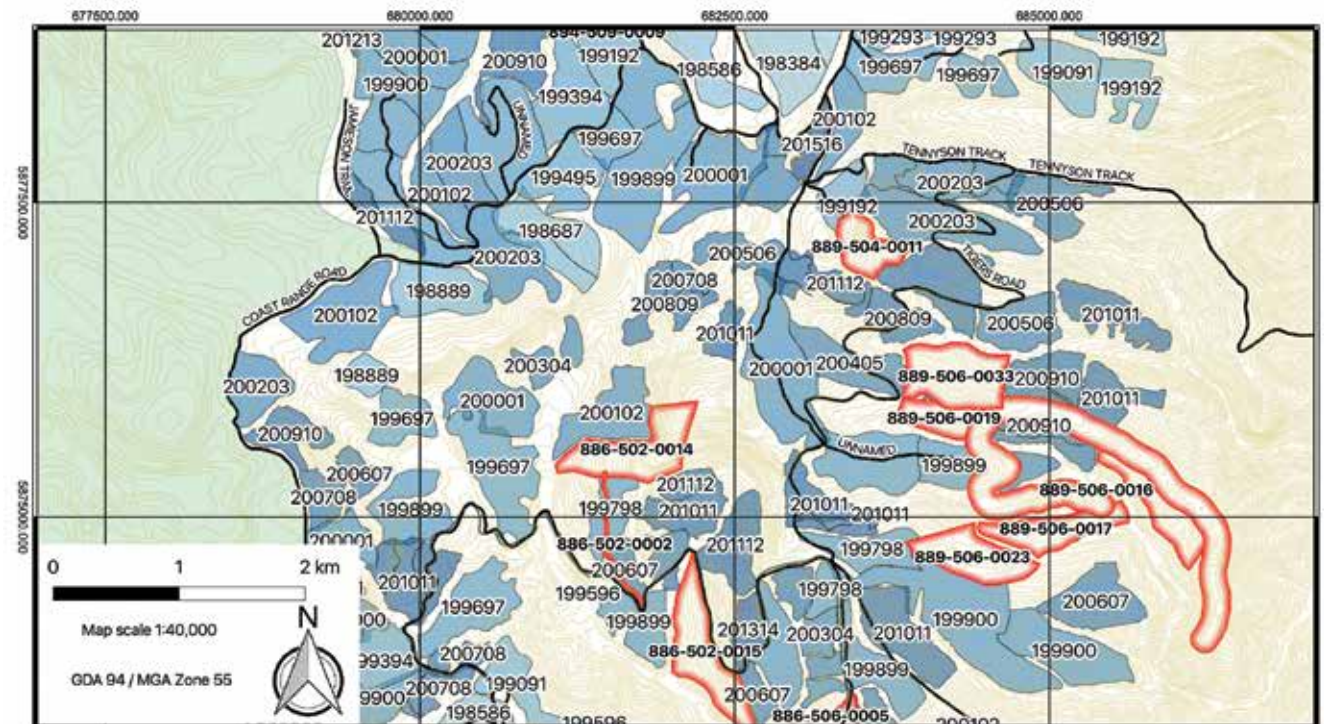
**Surveyed by:** DELWP and GECO  
**RFA area:** East Gippsland  
**Logging coupe number:** 886-502-0014  
**Logging detected:** March 2019  
**Greater Gliders detected:** DELWP 2, GECO 5

Also located in high quality Greater Glider habitat at Granite Mountain, coupe 886-502-0014 was an island of old growth forest within a heavily logged landscape, providing an extremely important refuge for Greater Gliders.

The forest in this coupe had no recorded logging history and contained high numbers of large hollow-bearing trees. DELWP surveys recorded two Greater Gliders in the coupe prior to logging.

GECO surveys recorded five Gliders whilst logging was occurring, indicating that numbers were likely to have been higher before logging commenced.

Logging has impacted on hollow-bearing trees and sites where Gliders were detected.



Some of the Greater Gliders detected (top). A map of the logging history of Granite Mt demonstrating the importance of coupe 886-502-0014 (shown outlined in red in the middle of the map) as an isolated patch of habitat with no recorded logging. Other scheduled coupes are shown outlined in red and logged coupes in blue. The number inside each blue shaded coupe indicates the year it was logged (i.e. 201011 = logged 2010 to 2011) with the most recently logged coupes shaded darker (bottom). MAP: Ed Hill.



## 6. Strathbogie Ranges – the highest density of Greater Gliders in Victoria logged

**Surveyed by:** SOSF, ARI

**RFA area:** North East

**Logging coupe number:** 411-501-0002

**Logging detected:** April 2018

**Greater Gliders detected:** 22

The Strathbogies are home to an isolated population of Greater Gliders that have found refuge in the wetter, higher altitude forests of the eastern Ranges – the area that is commercially desirable for logging.

In an effort to protect their forest, community group Save Our Strathbogie Forest conducted spotlighting surveys along 27 km of tracks and 161 ha of forest across the Ranges, detecting 202 Greater Gliders.

SOSF surveys twice detected 12 Greater Gliders in 1 km transects along the roadside adjacent to coupe 411-501-0002, a number that would have triggered protection in East Gippsland.

Powerful Owl calls were heard on four occasions during surveys in two separate locations, indicating the

importance of the forest for hollow dependent fauna.

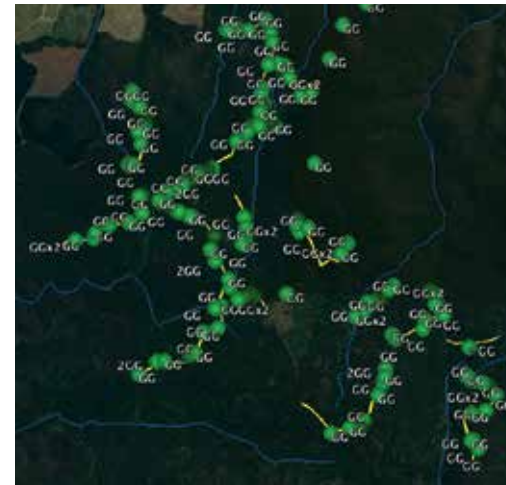
The government's Arthur Rylah Institute carried out 500 m transect surveys within the coupe and found 22 Gliders with an average of 14.7 per km. These surveys confirmed the area contains the highest densities of Greater Gliders recorded anywhere in Victoria.<sup>60</sup>

Following pressure from community members, VicForests agreed to carry out surveys in coupe 411-501-0002 before logging commenced. This did not occur.

On 4 November 2016, the SAC wrote to the Minister recommending logging be halted in the Strathbogie Ranges through an Interim Conservation Order.<sup>61</sup> On 24 November, the convener of the SAC wrote again to the Minister, concerned about the *significant impact* logging could have on the Gliders.<sup>62</sup> (Detailed in Part 4 of this report).

The ARI agreed with the SAC that Glider populations had declined sharply elsewhere and that the *relatively large* population in the Strathbogies is an *important refuge*.<sup>63</sup>

After more than a year of campaigning by locals to protect the forest and its Gliders, logging went ahead in coupe 411-501-0002 in April 2018 in the face of vehement protest.



Some of the Greater Glider detections recorded by SOSF across the Strathbogie Ranges, plotted in Google Maps (top left). Strathbogie locals with a tree inside the coupe (top right). After logging (bottom).



## 7. Castella – Glider refuge in landscape heavily impacted by fire logged

**Surveyed by:** WOTCH

**RFA area:** Central Highlands

**Logging coupe numbers:** 297-501-0001

**Logging detected:** Feb 2019

**Greater Gliders detected:** 11

The Castella forest block in Toolangi State Forest is a wildlife refuge amidst a landscape heavily impacted by wildfire.

At an altitude of 590 m above sea level, this coupe contained a relatively undisturbed area of important Glider habitat with large hollow-bearing trees and preferred eucalypt species *E. regnans*.

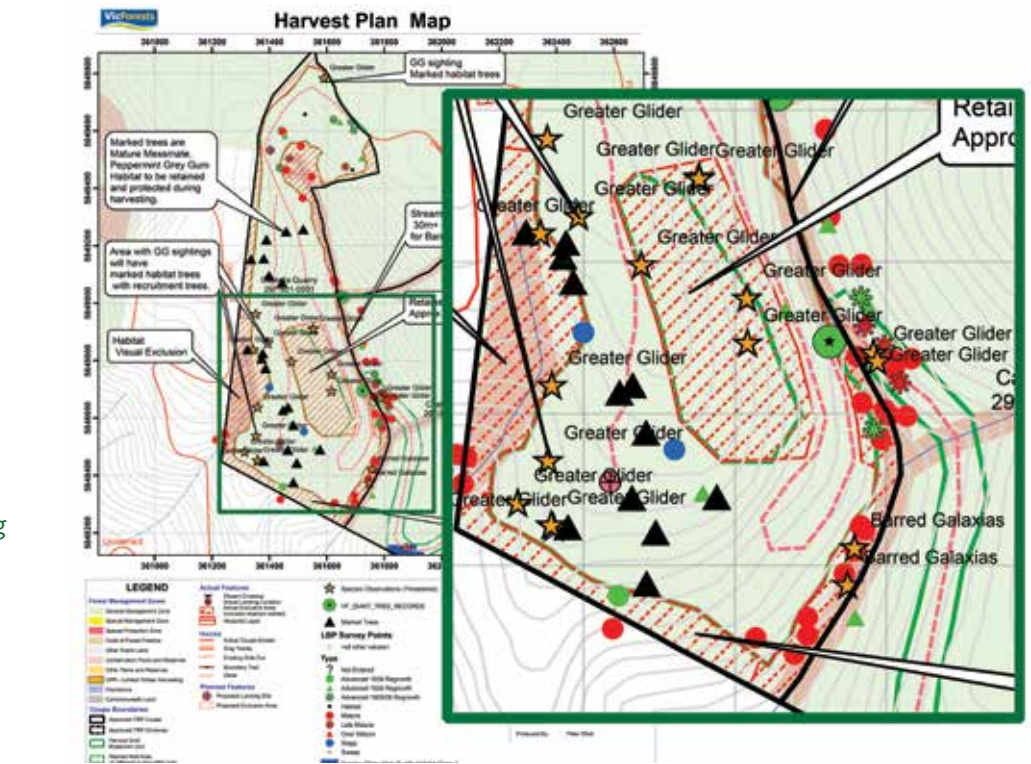
WOTCH detected Greater Gliders for the first time ever in this area, finding 11 Gliders within coupe 297-501-0001 during one survey and a further 4 in additional surveys. A further 11 Gliders were found in adjacent coupes.

This discovery of a previously unknown population of Greater Gliders was reported to DELWP and VicForests. WOTCH advised that the remaining part of the coupe that had not been surveyed should be subject to further

searches for Gliders.

Despite strong public opposition and the discovery of a population of critically endangered Barred Galaxias fish in a creek within the coupe, logging went ahead in February 2019.

Greater Glider detections can be seen as yellow stars on VicForests' Harvest Plan Map illustrating that VicForests knowingly logged Glider detection locations (top right). Logging commenced in the coupe (bottom right). A large hollow-bearing tree inside the coupe (below).





## 8. Hermitage Creek – very high density of Gliders and hollow-bearing trees logged

**Surveyed by:** FFRC and WOTCH

**RFA area:** Central Highlands

**Logging coupe number:** 307-505-0011

**Logging detected:** August 2017

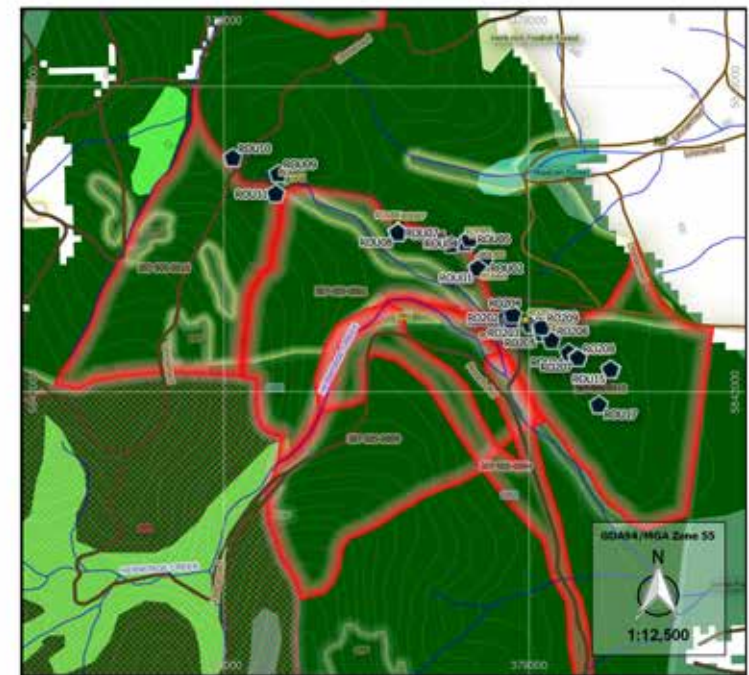
**Greater Gliders detected:** 7

Also located in Toolangi State Forest, this Greater Glider hotspot was discovered in the Hermitage Creek catchment.

This coupe was surveyed following the discovery of high densities of Greater Gliders and hollow-bearing trees little more than 1 km away in coupe 307-505-0012, where FFRC and WOTCH reported 13 Greater Glider detections and mapped 33 hollow-bearing trees. A further survey effort in the area found 17 Greater Gliders across several coupes in the Hermitage Creek catchment.

Despite reporting the high quality of habitat and the presence of Gliders in this area and the detection of 7 Gliders within coupe 307-505-0011 itself, logging commenced in August 2017, two months after the Greater Glider was listed as a threatened species.

After logging (top right). Greater Glider detections marked with dark blue hexagons inside coupe 307-505-0011 with the coupe boundary marked in red (below left). Greater Glider detections in nearby coupes (below right). The bottom corner of coupe 307-505-0011 can be seen at the top of the map on the right. MAPS: Andrew Lincoln.





## 9. Baw Baw – an isolated population of Greater Gliders logged

**Surveyed by:** WOTCH

**RFA area:** Central Highlands

**Logging coupe numbers:** 484-501-0026, 484-501-0001

**Logging detected:** May 2018

**Greater Gliders detected:** 12

WOTCH identified high quality Greater Glider habitat at Baw Baw in Tanjil State Forest.

Following the detection of logging in coupes 484-501-0026 and 484-501-0001, WOTCH carried out spotlighting surveys detecting 5 and 7 Greater Gliders respectively.

These results were reported to DELWP, along with the detection of a Koala and Powerful Owl, further species reliant on the habitat present.

WOTCH stated in their report that a more comprehensive survey for coupe 484-501-0026 was required as their survey was limited to a small part of the coupe that was accessible at the time.

Neither VicForests nor DELWP carried out pre-logging surveys for Greater

Gliders before the coupes were logged. Following WOTCH's reports, logging continued without surveys or delay.

The forest within these two coupes was some of the last remaining old growth, mixed aged, mixed species forest in the region. Due to extensive logging from 1995 onwards, the surrounding forest contains unsuitable habitat for the Glider with an absence of large hollow-bearing trees. The populations detected were therefore isolated.

Due to logging within these coupes, localised extinction is now highly likely.

Logging in coupe 484-501-0026 (top right) and the post-logging burn (bottom right). Logging just commenced in coupe 484-501-0001 (below).





**10. Kinglake – logging preparations in progress at the time of this report in habitat heavily impacted by fire**

**Surveyed by:** DELWP

**RFA area:** Central Highlands

**Logging coupe number:** 295-539-0001

**Logging detected:** June 2019

**Greater Gliders detected:** 8

Kinglake is another area heavily impacted by wildfire. The forest in coupe 295-539-0001 is a particularly important refuge of large hollow-bearing trees as it provides a link between the east and west sections of Kinglake National Park.

DELWP surveys detected 8 Greater Gliders in the coupe, covering only a portion of the area to be logged.

Logging preparations have commenced against strong local opposition and are ongoing at the time of this report.

Some of the Greater Gliders detected by local community members (top and bottom left). Signage to keep the public out of the area as logging operations get underway (bottom right).





## Case studies: scheduled coupes

### 11. Cottonwood Range (Cottonwood Range Rd) – logging halted but still scheduled in Glider stronghold

**Surveyed by:** FFRC and GECO

**RFA area:** East Gippsland

**Logging coupe numbers:** 895-505-0011, 895-505-0015

**Greater Gliders detected:** 14

As described in Case Study 1, Cottonwood Range is known as a stronghold for Greater Gliders. This high altitude forest with unlogged forest patches contains an abundance of large hollow-bearing trees comprising species preferred by the Greater Glider.

In late 2015, FFRC and GECO carried out eleven surveys over five evenings across twelve coupes in Cottonwood Range, including coupes 895-505-0011 and 895-505-0015. A total of 78 Greater Gliders were detected with high densities recorded in eight out of eleven surveys, providing unequivocal evidence of the importance of this area as Greater Glider habitat.

Despite this, with no surveys conducted by VicForests or DELWP, logging was detected in coupe 895-505-0011 in

August 2016. In response, GECO and FFRC carried out further surveys within this coupe and detected a high density of Greater Gliders. This survey report, along with community pressure, resulted in logging being halted.

The coupe, however, is listed on VicForests' Timber Release Plan and remains available for logging, as does adjacent coupe 895-505-0015.

Greater Glider adjacent to coupes 895-505-0011 and 895-505-0015 (bottom left) PHOTO: Ed Hill.

Old growth tree within coupe 895-505-0015 (right) PHOTO: Raph Korman





**12. Cottonwood range (Dartmoor Track) – no action for high density of Gliders three years after report**

**Surveyed by:** FFRC and GECO

**RFA area:** East Gippsland

**Logging coupe numbers:** 895-505-0012, 895-505-0013

**Greater Gliders detected:** 15

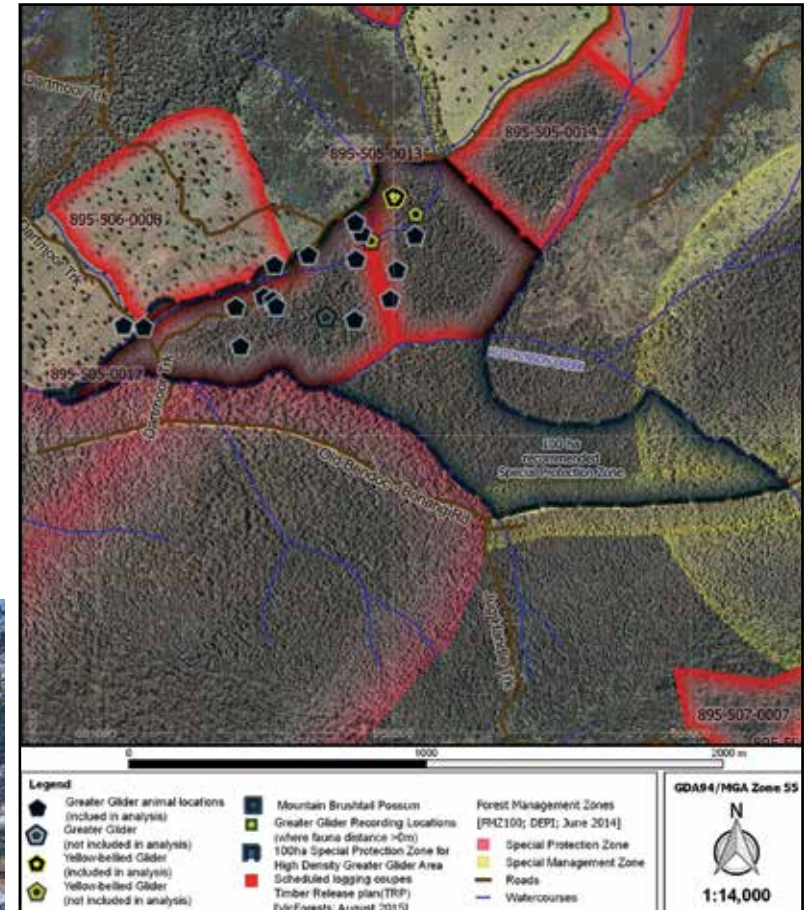
Just south of the Cottonwood coupes described in Case Study 11, FFRC and GECO surveys recorded Greater Gliders within coupes 895-505-0012 and 895-505-0013 in 2016 at Dartmoor Track in densities that should have triggered legal protection.

FFRC and GECO submitted their report in August 2016. DELWP failed to provide any updates until GECO requested an update in April 2019. At the time of writing, DELWP have informed GECO that verification surveys were planned.

GECO has raised concerns with DELWP regarding the timing of verification surveys and how that may influence results. In this case the planned verification survey has not taken place almost three years after the report of the Glider population.

Rather than pro-actively use powers available to them to implement protective zoning for Greater Gliders, DELWP has sat on this report for nearly three years and the habitat remains threatened by logging.

FFRC / GECO map recording Glider detections as dark blue hexagons in and around coupes 895-505-0012 and 895-505-0013. The coupes are outlined in red. The suggested SPZ is outlined in dark blue (top right). MAP: Andrew Lincoln. Some of the hollow-bearing trees inside the coupes (below and bottom right).





**13. Cottonwood Range (Jug Handle Track) – no action for high density of Gliders**

**Surveyed by:** GECO and FFRC

**RFA area:** East Gippsland

**Logging coupe numbers:** 890-508-0001, 895-508-0002

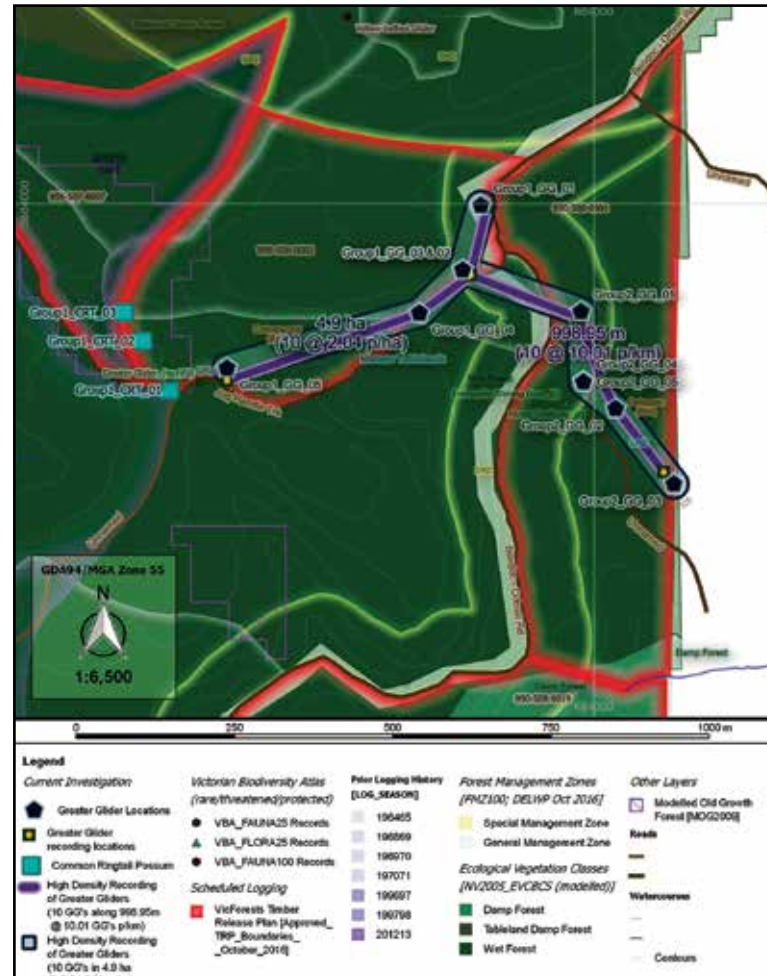
**Greater Gliders detected:** 10

At the southern end of Cottonwood Range, GECO and FFRC surveys recorded 10 Greater Gliders in 998 m across these two coupes.

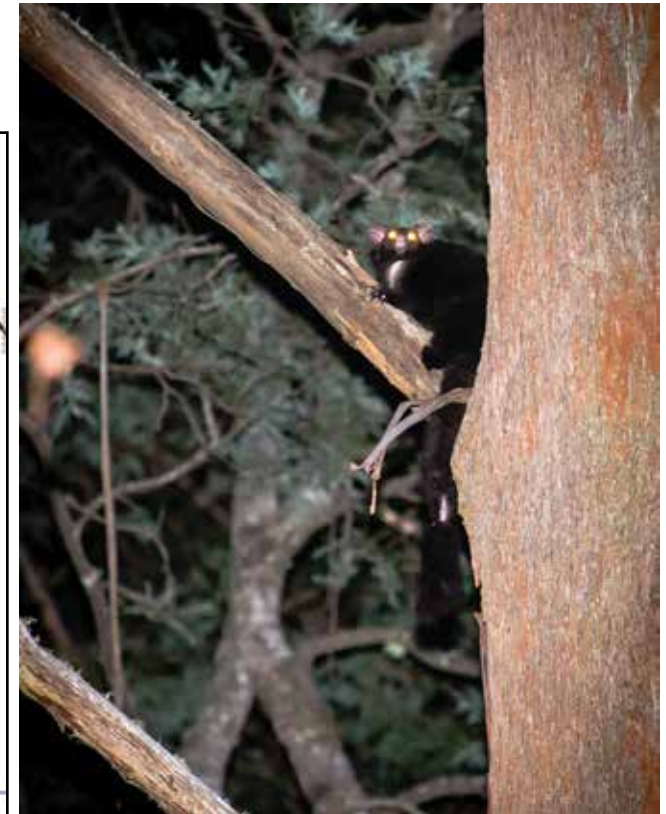
A report was submitted to DELWP detailing the high density population and urging DELWP to implement a special protection zone.

DELWP has not provided any updates regarding the status of their investigation into the coupe and whether any verification surveys and protections are planned.

This area of tall wet forest contains many large old hollow-bearing trees that provide important habitat. The habitat is somewhat isolated with cleared farmland directly to the east of coupe 890-508-0001 and logged forest to the west of coupe 895-508-0002.



GECO / FFRC map recording Greater Glider detections as dark blue hexagons in and around coupes 890-508-0001 and 895-508-0002. The coupes are outlined in red. The purple line demonstrates that the 10 Gliders were found along 998.95 km (above). Some of the Gliders detected (top and bottom right) PHOTOS: Martin Stringer.





**14. Cottonwood range (Pines Track)  
– very high conservation value forest  
and high density of Gliders scheduled  
for logging**

**Surveyed by:** GECO

**RFA area:** East Gippsland

**Logging coupe numbers:** 893-503-0018,  
893-503-0019

**Greater Gliders detected:** 11

At the southern end of Cottonwood Range, just west of coupes described in Case Study 13, GECO surveys in coupes at Pines Track recorded 11 Greater Gliders over a distance of 1 km, triggering the legal requirement for a protection zone. A report was submitted on 4 June 2019.

Forest within coupes 893-503-0018, 893-503-0019 is montane dry woodland with sections of sub-alpine woodland that has never been logged. The forest is rich in old hollow-bearing trees in excess of 150 years old.

Coupe 893-503-0019 contains approximately 9 ha of modelled old growth forest and coupe 893-503-0021 contains approximately 13 ha of modelled old growth forest, both areas identified in the government's own records as Modelled Old Growth.

This important remnant area of old growth sub-alpine forest adjoins the Delegate River and sub-alpine treeless vegetation, sphagnum bog and alpine grasslands. It is of very high conservation value.

At the time of this report there was no indication that this area would be protected.



Some of the hollow-bearing trees inside the coupes (left and above right). Alpine grasslands and bog adjoining the forest (bottom right).  
PHOTOS: Dave Caldwell



**15. Queensborough – no action for high density of Gliders one year after report**

**Surveyed by:** GECO

**RFA area:** East Gippsland

**Logging coupe numbers:** 892-507-0015, 892-507-0014, 892-507-0022

**Greater Gliders detected:** 19

As described in Cast Study 2, due to its elevation, abundance of large hollow-bearing trees and favoured eucalypt species, the Queensborough River catchment is an important hotspot for Greater Gliders.

This aggregation of coupes totalling approximately 155 ha was proposed for addition to VicForests' Timber Release Plan in 2017. The coupes are planned in tablelands damp forest that is rich in hollow-bearing trees.

DELWP's Greater Glider Habitat Distribution Model lists approximately 145 ha of forest as scoring 10 out of 10 for Greater Glider habitat and 10 ha scoring 9 out of 10 in this area.

GECO surveys detected 19 Greater Gliders during one survey in March 2018. Over a distance of 1 km the survey observed 13 Gliders, meeting the

threshold to trigger protection.

A survey report was submitted to DELWP in April 2018. One year later in April 2019, DELWP informed GECO that verification surveys were yet to be undertaken. The coupes were added to VicForests logging plan later in April 2019.

At the time of writing it is understood DELWP is yet to act on the report of Greater Gliders and has not conducted verification surveys and implemented required zoning actions. DELWP's investigation remains open at the time of writing.

Some of the hollow-bearing trees inside the coupes. PHOTOS: Ed Hill





**16. Castella – remaining refuge for isolated Gliders scheduled for logging**

**Surveyed by:** WOTCH

**RFA area:** Central Highlands

**Logging coupe numbers:** 297-501-0005, 297-501-0006

**Greater Gliders detected:** 11

As described in Case Study 7, the Castella forest block in Toolangi State Forest is a wildlife refuge amidst a landscape heavily impacted by fire. It contains a relatively undisturbed area of important Glider habitat with large hollow-bearing trees and preferred eucalypt species *E. regnans*.

As logging has impacted on habitat of an isolated population of Greater Gliders in coupe 297-501-0001, it is critical that adjacent coupes 297-501-0005 and 297-501-0006 are protected. WOTCH has reported the detection of 2 and 9 Greater Gliders respectively inside these coupes.

DELWP's public records reported 14 Greater Glider detections in coupe 297-501-0005 at the time of writing.

At the time of this report there is no indication that DELWP will halt logging in Castella forest or prevent these further two coupes from being logged.

Greater Gliders within the Castella coupes (left) Mountain ash forest above a lush understorey in the Castella coupe (below)





**17. Camberville, Toolangi, Ada and Noojee – logged Greater Glider habitat subject to trial and still scheduled for logging**

**Surveyed by:** WOTCH

**RFA area:** Central Highlands

**Logging coupe numbers:** 290-525-0002, 298-502-0003, 312-002-0006, 345-505-0006, 462-504-0009

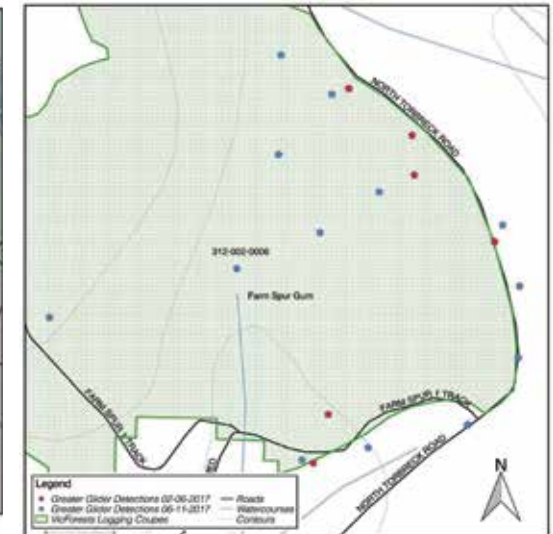
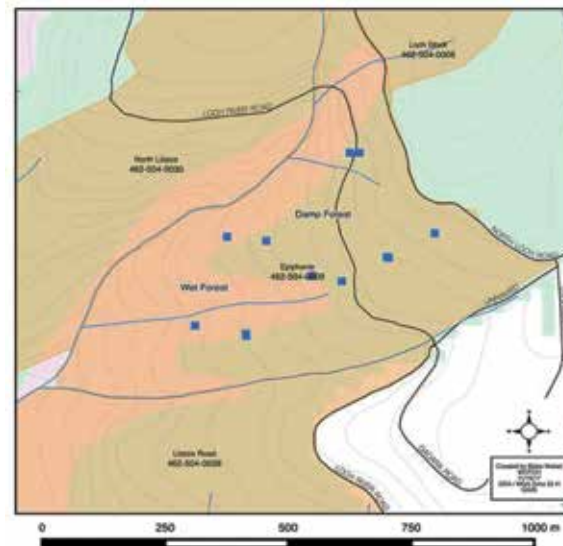
**Greater Gliders detected:** 45

Logging had commenced in the following 5 coupes when WOTCH carried out surveys for Greater Gliders. WOTCH found 45 Gliders in total within these coupes (4, 12, 14, 3 and 12 respectively).

As a consequence, the coupes became the subject of a Federal Court trial and logging has ceased as the trial proceeds.

There are 33 scheduled coupes where Greater Gliders have been detected that are subject to the trial. These coupes remain listed on VicForests' Timber Release Plan and may be logged in the future.

One of the Greater Gliders detected in coupe 290-525-0002 (top). Map showing Glider detections as blue squares in coupe 462-504-0009 (bottom left). MAP: Blake Nisbet. Map showing Glider detections as red and blue hexagons in coupe 312-002-0006, the different colours indicating two different survey dates (bottom right). MAP: WOTCH.





**18. Kinglake – Greater Glider habitat heavily impacted by fire scheduled for logging**

**Surveyed by:** DELWP

**RFA area:** Central Highlands

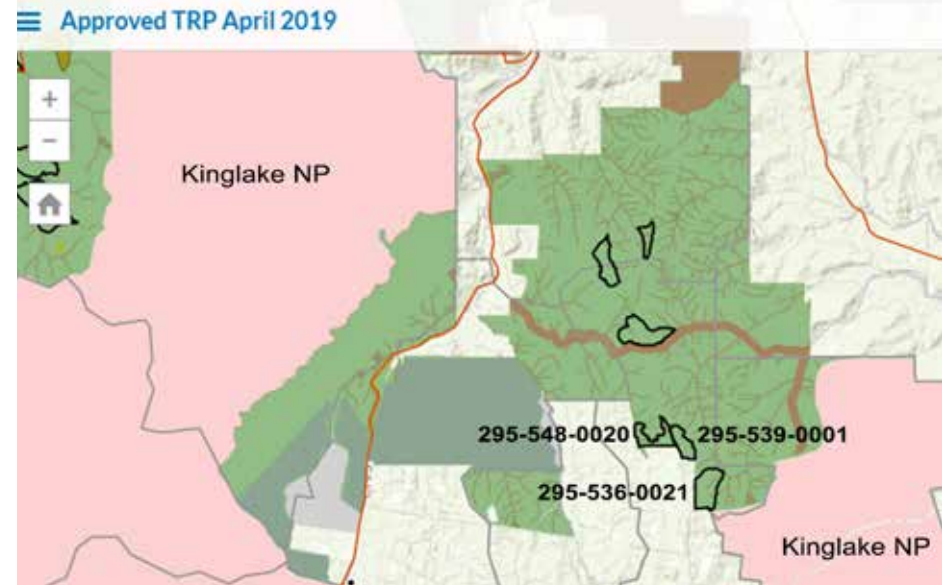
**Logging coupe number:** 295-548-0020, 295-536-0021

**Greater Gliders detected:** 13

As described in Case Study 10, Kinglake is another area heavily impacted by wildfire. Logging is currently taking place in coupe 295-539-0001 with further logging scheduled for adjacent coupe 295-536-0021 where WOTCH has detected 1 Greater Glider and nearby coupe 295-548-0020 where WOTCH has detected 12 Greater Gliders.

This is a particularly important refuge of large hollow-bearing trees as it provides a link between the east and west sections of Kinglake National Park which is currently being logged.

Greater Gliders detected in coupe 295-548-0020 (top). PHOTO: Karena Goldfinch. Screenshot of VicForests Approved TRP showing scheduled coupes in black outlines. Coupe numbers and National Park labels have been added (bottom).



## PART 4. Why are environment laws failing the Greater Glider?

While the science is clear that logging is one of the primary threats driving the Greater Glider to extinction, and while DELWP has clear legal obligations under the Code and the FFG Act to protect Greater Gliders from the threat of logging, DELWP is failing to take appropriate action to prevent the logging of the Glider and its habitat. Why is this the case?

The answer is stated clearly by DELWP itself. While there is no mention – in legislation, DELWP policy or the Code – of logging interests being a consideration when determining threatened species protection, Fol documents reveal DELWP advising the Minister that, the development and assessment of options for protection of the Greater Glider will include *consideration of the potential impacts on timber availability*.<sup>64</sup>

Environment laws are to protect the environment, not the logging industry. But in Victoria the department charged with implementing, monitoring and enforcing environmental laws has the logging industry's interests at their core.

In fact, the same Fol document providing advice to the Minister

regarding the Glider states: *it should be noted that, while the evidence of decline might be sufficient to warrant listing using a precautionary approach, it might not be adequate to base a comprehensive system of protection*.<sup>65</sup>

Here we see DELWP contradicting the unequivocal determination of the SAC under the FFG Act and actively lobbying against appropriate protection for the Greater Glider.

DELWP instead recommended the following interim protection measure: *if appropriate, implement feasible, low-impact zoning changes, in consultation with VicForests*.<sup>66</sup>

Again DELWP places a logging agency at the centre of decisions about protecting the Glider from logging, revealing a clear conflict of interest. Furthermore, DELWP erroneously advised the Minister that neither she nor the Secretary had the power to stop legal forestry operations.

In an article in *The Age* (June 2017) exposing DELWP's advice to the Minister, Environmental Justice Australia lawyer Danya Jacobs stated it is *outrageous for the department to*

*pretend the minister's hands are tied*.<sup>67</sup>

Media coverage in *The Guardian* (April 2018) detailed correspondence from the SAC writing directly to the Minister on 4 November 2016 calling on her to use her powers under the FFG Act to issue an Interim Conservation Order to halt logging Greater Glider habitat in the Strathbogie Ranges.<sup>68</sup> The SAC Convenor wrote a second time on 24 November concerned about the *significant impact* that logging would have on the Glider.<sup>69</sup> This advice was rejected and the Minister instead elicited the advice of DELWP that urged her to develop protections that would have minimum impact on timber yields, as seen above.

### **Independent review of timber harvesting regulations**

Following community pressure, media exposure<sup>70</sup> and a failed attempt to prosecute VicForests for illegally logging rainforest,<sup>71</sup> the Minister initiated an investigation into DELWP's regulation of the logging industry.

On 15 March 2019, DELWP released the *Independent review of timber harvesting regulation* report.

The report states that DELWP has in fact completed its work identifying protection measures for the Greater Glider and that the implementation of these actions is being delayed due to deliberation across the government.<sup>72</sup> This highlights the politicised environment around logging regulation. It is the responsibility of the Minister and DELWP to implement protections for the Greater Glider – agreement from the whole of government is not required. As a result, logging continues in Greater Glider habitat that may require protection under DELWP's proposed prescriptions.

The report itself uses the case of the Greater Glider to illustrate the inflexibility of the regulatory framework, and DELWP's failure to address the impacts of logging through the development of an Action Statement.<sup>73</sup>

The report states that VicForests is, in a practical sense, acting as a self-regulator; that DELWP does not see itself as a regulator and has weak regulatory practice and capability, no clear prosecution procedures or regulatory policy; and that DELWP's Timber Harvesting Compliance Unit



has neither the capability nor capacity to achieve its objectives.<sup>74</sup>

### **Systemic regulatory failure**

The case of the Greater Glider is just one example of VicForests failure to comply with the regulatory framework's environmental protections and the systemic failure of DELWP to enforce compliance.

As stated earlier, since 2009, community citizen science groups have submitted in excess of 300 reports to DELWP documenting protected species or environmental values that require protection under the Code. GECO and FFRC's *Lawless logging* report documents 27 cases where logging had already occurred or was imminent in areas that were required to be set aside to protect environmental values – such as a threatened species or rainforest – between 2015 and 2017.<sup>75</sup>

Despite hundreds of reports and dozens of serious breaches brought to the attention of the Department, there are just two instances of DELWP pursuing prosecution of VicForests for breaches of the Code. Neither proceeded through to trial and so no

evidence was called for either case: the first was settled between DELWP and VicForests immediately before the initial hearing;<sup>76</sup> the second was thrown out of court due to vague and imprecise language on charge sheets compiled by DELWP.<sup>77</sup>

In response to the lack of prosecutions by the regulator, community groups have stepped in to take VicForests and/or DELWP to court. At the time of publication of this report, there are 75 areas of forest where logging has been put on hold due to legal injunctions listed in two separate trials in which community groups are prosecuting for failure to protect old growth forests, threatened species and their habitat: *Friends of Leadbeater's Possum v VicForests* (to protect threatened species subject to logging in Victoria's Central Highlands) and *Fauna and Flora Research Collective Inc v Secretary to the Department of Environment, Land, Water and Planning and VicForests* (to protect East Gippsland's old growth forests).

In response to DELWP's failure to fulfil its role and the Minister's lack of action in addressing this failure, a movement of community groups is now undertaking the role of monitoring

logging operations, surveying and reporting environmental values, enforcing their protection and prosecuting where this process fails. This work to ensure the protection of the Greater Glider and other threatened species should not fall on the shoulders of community volunteers.

### **Ending Regional Forest Agreements**

For twenty years, RFAs have provided state based logging with an exemption from federal environment law, by handing responsibility for management of threatened species protection to states. Victorian environment laws have demonstrably failed threatened forest species, highlighting the failure of RFAs.

The *Independent Consultation Paper - Modernisation of the Victorian Regional Forest Agreements* (2019) states that Victoria's forests are now home to 475 threatened species, 140 of which are endangered, 28 critically endangered. Nine forest species are now extinct and ten regionally extinct.<sup>78</sup>

The Victorian government is currently deciding whether to renew RFAs for another twenty years. Renewing RFAs

and extending the logging industry exemption from federal environment laws will hasten the decline of the Greater Glider and lock in destruction of habitat for decades to come.

The expiry of both the East Gippsland and Central Highlands RFAs in 2020 presents a unique opportunity to reform forest management and improve outcomes for threatened species. The Victorian government's RFA modernisation program should seize this opportunity by ending logging's legal exemption from the EPBC Act.

## Summary

In summary, this report demonstrates a systemic failure of DELWP to protect the Greater Glider from logging since its listing as a threatened species, including failure to:

- Ensure adherence to the Code, including: identifying Greater Gliders before logging is carried out, protecting high densities of Greater Gliders, and ensuring VicForests is applying the precautionary principle to protect Greater Gliders.
- Use the powers of the Minister under the SFT Act to issue a direction to VicForests to refrain from logging Greater Glider habitat and where Greater Gliders are found.
- Prosecute VicForests for breaches of the Code where Greater Gliders were not protected.
- Use powers of the Secretary and Minister under the FFG Act to declare critical habitat for the Greater Glider and issue an Interim Conservation Order to halt logging in this habitat.
- Produce an Action Statement as soon as possible after the Greater Glider was listed as a threatened species under the FFG Act.
- Ensure VicForests applies the precautionary principle and protect Greater Gliders in the absence of an Action Statement.

One of the old growth trees logged in coupe 889-504-0011 at Granite Mt, East Gippsland.





## Part 5. Recommendations

Considering the impact logging has had and will continue to have on the Greater Glider, and considering the interacting threats of climate change, drought and wildfire are predicted to increase, the survival of the Greater Glider not only depends on halting threats that are causing its decline, but ensuring that adequate habitat is protected for its recovery.

Therefore, it is recommended to the Victorian Government that:

1. Environment Minister Lily D'Ambrosio issue an Interim Conservation Order to halt logging in all Greater Glider habitat; that Greater Glider habitat be identified based on consultation with the Scientific Advisory Committee, Greater Glider experts and community groups; and that all forest areas where Greater Gliders have been detected across Victoria be subject to the Interim Conservation Order.
2. An Action Statement be produced for the Greater Glider outlining appropriate actions that will protect the Glider and its habitat from logging.
3. Specific prescriptions be developed for the protection of all hollow-bearing trees across Victoria through the implementation of mandatory 100 m buffers on all hollow-bearing trees.
4. Regional Forest Agreements not be renewed and the exemption of the logging industry from federal environment laws be terminated so that all logging operations are required to be assessed under the EPBC Act.
5. A timeline be finalised to transition industrial logging out of Victoria's public native forests.
6. Formal protection of Greater Glider habitat be achieved through an expansion of parks and reserves including the East Gippsland Emerald Link proposal and the Great Forest National Park, creating a system of formal reserves of adequate size and connectivity to enable the recovery of the Greater Glider and give the species the best chance of survival in the face of increasing pressures from climate change, drought and wildfire.



Greater Glider at Hermitage Creek, Victorian Central Highlands. PHOTO: Justin Cally.

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**Cottonwood Range in East Gippsland is a Greater Glider stronghold. Coupe 895-505-0015, seen in the foreground, is scheduled for logging. It could start any day.**





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