

MOUNT COLE FOREST CLEARFELLING CRITICAL OWL HAVENS



THREATENED SPECIES
DETECTION REPORT
MT. COLE STATE FOREST
SONG METER ANALYSIS

FEBRUARY 2021





VICTORIAN NATIONAL PARKS ASSOCIATION

The Victorian National Parks Association (VNPA) is Victoria's leading nature conservation organisation. VNPA is an independent, non-profit, membership-based group, which exists to protect Victoria's unique natural environment and biodiversity through the establishment and effective management of national parks, including marine national parks, conservation reserves and other measures.

We achieve our vision by facilitating strategic campaigns and education programs, developing policies, through hands-on conservation work, and by running bushwalking and outdoor activity programs which promote the care and enjoyment of Victoria's natural heritage.

Published by the Victorian National Parks Association.

Victorian National Parks Association
Level 3, 60 Leicester Street, Carlton, Victoria, 3053
Phone: 03 9347 5188 | Fax: 03 9347 5199
Website: www.vnpa.org.au | Email: vnpa@vnpa.org.au



Length of investigation:
13/6/2020 to 25/7/2020
Date of report: 4/2/2021

Prepared by: Jordan Crook
Victorian National Parks Association
jordan@vnpa.org.au

*Cover image: Juvenile Powerful Owl
Photographer: David Lochlin*

We acknowledge that Mt. Cole is on the traditional land of the Beeripmo Balug tribe that form part of the larger Djab Wurrung people.

EXECUTIVE SUMMARY

In June 2019 following three years of thorough community consultation, Victoria's independent public land assessment body, the Victorian Environmental Assessment Council (VEAC), released its final land use recommendations for its investigation into the forests of the state's Central West.

The recommendations included an increase of 58,115 hectares in protected areas as national park, conservation park, nature reserve, bushland reserve and heritage river – including the Wombat Forest (near Daylesford), Wellsford Forest (near Bendigo), Pyrenees Ranges Forest (near Avoca), and Mount Cole Forest (near Beaufort) as well as many smaller forest areas. An additional 19,728 hectares of regional parks are proposed close to townships and to be managed primarily for recreation which will allow for almost all forms of recreation, including dog walking, fossicking and prospecting.

The proposed new national parks and reserves in the central west will protect (from damaging activities such as mining and logging) important habitat types currently under-represented in the reserve system, and will help deliver key elements of Victoria's biodiversity strategy.

On Christmas Eve 2019, Victoria's state owned native forest logging company, VicForests, released its plan to increase the intensity and amount of logging within Mount Cole State Forest. The plan increased the severity of logging in many areas from multi-aged stand management to single age stand/clearfell logging while also increasing the number of logging coupes. This included an almost doubling of coupes within the proposed Mount Buangor National Park area.

VEAC recommended 1,406ha of Mount Cole State Forest be added to the adjoining Mount Buangor State Park for the purpose of establishing a new Mount Buangor National Park to protect the area's natural and cultural heritage and water catchments. Some of the values of this area include the head waters of the Wimmera River, the Fiery Creek catchment, the popular Beeripmo walking track, and threatened species such as the critically endangered and endemic Mount Cole *Grevillea* and a significant population of Australia's largest owl species, the Powerful Owl.



Southern Boobook
Photographer: David Paul
Museums Victoria

EXECUTIVE SUMMARY



The state government was due to respond to VEAC's report as specified under legislation in February 2019 (prior to COVID-19) and a decision is now almost 12 months overdue. The VNPA has concerns that VicForests will undertake logging prior to a decision being made on the VEAC recommendations.

The VNPA has been conducting citizen science survey work at Mount Cole State Forest since the beginning of 2020. This survey work found Mt. Cole Grevillea in logging coupes around Fiery Creek as well as state and federally listed Grampians Bitter Pea and Mt. Cole Grevillea in areas being actively logged around Archie's Lookout Road. These reports can be found [here](#).

The following threatened species Detection Report outlines the results of data collected in June and July 2020 from acoustic recorders, also known as song meters, deployed at the Mount Cole State Forest near Raglan within the Midlands Forest Management Area. The song meters were set by volunteer citizen scientists between the COVID-19 lockdowns due to concerns that on-going logging is not being monitored adequately, and that threatened species and identified national park values are at risk.

The areas we investigated included logging coupes (added after VEAC gave its recommendations) within the Fiery Creek catchment and just outside of the proposed area near Archie's Road track where VNPA citizen scientists had recorded listed threatened species in early 2020.

Study Area 1 (Song Meters 1 & 2) was chosen for study because it is within an area assessed by VEAC as being of high quality and recommended to be gazetted into the proposed Mount Buangor National Park.

Study Area 2 (Song Meter 3) was chosen due to its proximity to current logging operations (within 1 km of song meter deployment).

The target species of our acoustic surveys within forest areas scheduled for logging included Powerful Owl (*Ninox strenua*), Yellow-bellied Glider (*Petaurus australis*) and Barking Owl (*Ninox connivens*).

These species were targeted due to the presence of existing records on the Victorian Biodiversity Atlas (DELWP) database within the study area and due to these species being known to be negatively impacted by forestry operations.

EXECUTIVE SUMMARY

“At the landscape-level, timber harvesting when conducted over a typical rotation period of 80 years will inevitably reduce the proportion of the forest in older age classes, including mature and senescent growth stages, depending on bushfire history. This effect will vary from area to area, depending on the extent of older age classes and their protection in the reserve system. However, where this effect is substantial, it would make the forest at a landscape-scale less suitable for hollow-dependent species such as possums, gliders and large forest owls”. (Department of Environment, Land, Water and Planning, 2020)

The Powerful Owl and the Barking Owl are listed as threatened species under the Flora and Fauna Guarantee Act 1988 (FFG Act). While the Yellow-bellied Glider is not currently listed in Victoria as a threatened species, it has been proposed for assessment by the Threatened Species Scientific Committee to be listed as endangered under the Environment Protection and Biodiversity Conservation Act 1999.

Our findings indicate that a population of Powerful Owl is present within the Mount Cole State Forest. Our data also shows that Mt. Cole is a refuge for Koala (*Phascolarctos cinereus*) as both male and female Koala were recorded several times during the survey period.

It is likely that the high density of logging coupes in the area will have a significant impact on Powerful Owl nesting opportunities and food availability due to the loss of adequate habitat for the owls and their prey. It is also of great concern that there is a lack of Management Prescriptions for Koalas within the Midlands Forest Management Area as Victoria carries a heavy responsibility for the conservation of this nationally treasured species.

The findings of this report reaffirm the importance of creating new national parks at Mt Cole as recommended by VEAC.

This report will document:

- Methods of survey work
- Our concerns about logging operations at Mt. Cole
- Results of survey work
- Discussion and recommendations



*Koala
Otway National Park
Photographer: Cassie Lafferty*

ACOUSTIC SURVEY METHODS

- Three SM4 Acoustic Recorder Song Meters were deployed in the Mt. Cole State Forest in areas threatened by logging from the 13 of June 2020 to the 25 of July 2020
- Digital cameras were used to record and document positions of song meters.
- Global Positioning Systems (GPS) were used to document the location of song meters.
- Song meter data was analysed by a qualified ecologist, using Kaleidoscope software.



CONCERNS ABOUT LOGGING OPERATIONS AT MT. COLE

Logging in areas assessed to become national park by VEAC

There are 14 logging coupes within or mostly within the Mount Cole State Forest, an area of high conservation value and recommended to be included in Victoria's national parks estate by the Victorian Environmental Assessment Council in the Central West Investigation Final Report (2019) which took place over three years with extensive public consultation.

In February 2020, the current Victorian Government missed its statutory deadline to make a decision on VEAC's recommendations to establish 60,000 ha of new national parks in Victoria's central west, in the Wombat, Wellsford, Mt Cole and Pyrenees State Forests.

VEAC recommended 1,406ha of Mount Cole State Forest be added to the adjoining Mount Buangor State Park for the purpose of establishing a new Mount Buangor National Park to protect the area's natural and cultural heritage and water catchments.

VicForests would not commit to refraining from logging in the proposed Mount Buangor National Park area while waiting for the State government to make a decision on the VEAC recommendations (VicForests, per comms. 10th Feb 2020).

The creation of Mount Buangor National Park would make a significant contribution to achieving a comprehensive, adequate and representative reserve system (CAR) by increasing the protection of a number of priority Ecological Vegetation Classes (EVCs) that are endangered and depleted in the region.

Traditional Owners also have particular concerns about the protection of the Wimmera River and Fiery Creek and their catchments (VEAC 2019).



Powerful Owl
Photographer: Patrick Kavanagh

The proximity of logging coupes to national park values and assets such as the Smith Bridge Camp ground and Beeripmo Walk will negatively impact the enjoyment of the park for the tens of thousands of Victorians and tourists who visit the area each year. This would impact visitor enjoyment of the area which brings in many tourists to the region as well as being an important place for locals.

Lack of pre-logging surveys and concerns regarding compliance with the Code of Practice for Timber Production 2014

During a meeting on the 10th February 2020 with VicForests representatives, it was confirmed that pre-logging survey work was not being undertaken by DELWP or independent ecological consultants prior to the logging of coupes within the Mount Cole State Forest and surrounding state forest areas in the Midlands Forest Management Area or western forest management areas in general.

It was then further added that any pre-logging 'checking' of coupes that is being undertaken is being done so by VicForests foresters themselves, due to DELWP being 'busy' (VicForests per coms. Feb 10th 2020).

During a meeting with the Office of the Conservation Regulator (OCR) in mid 2020, it was confirmed that pre-logging survey work was not being undertaken in the West RFA area. This is in contrast to the east of the state which is part of the Forest Protection Survey Program conducted by DELWP. Only post-logging survey work is being conducted by DELWP/OCR in the west.

The West RFA area has the highest number of nationally threatened species of any of the RFA areas, with more than double that of East Gippsland and Central Highlands (State of Victoria & Commonwealth of Australia, 2019).

The forests of Mt. Cole contain many threatened and endemic species found nowhere else on earth.

Concerns remain around the lack of un-biased pre-logging survey work and that any work being undertaken is potentially carried out by un-qualified VicForests personnel.

These concerns are heightened by listed threatened species being detected by citizen scientists in areas scheduled for logging, including species such as the endemic Mount Cole Grevillea (*Grevillea montis-cole* subsp. *montis-cole*), the Grampians Bitter-pea (*Daviesia laevis*) and the Powerful Owl (*Ninox strenua*) all of which are negatively impacted by logging operations.

The VNPA has concerns that VicForests will undertake logging prior to a decision being made on the VEAC recommendations.

We also have concerns around the clearing of poorly reserved and threatened EVCs that are needed to meet JAVIS criteria for a comprehensive, adequate and representative reserve system.

These criteria are referred to in The Code of Practice for Timber Production under section 4.6.7.1 Maintain a CAR reserve system within the FMAs consistent with the JANIS criteria.



The lack of pre-logging survey work and the potential for survey work to be undertaken by persons with a conflict of interest and/or a lack of adequate skills and knowledge to identify threatened plant and animal species in the field, raises concerns in regards to compliance with The Code of Practice for Timber Production 2014, specifically under section 2.2.2 dealing with Conservation of Biodiversity, Mandatory Actions, Addressing biodiversity conservation risks considering scientific knowledge (page 34).

We have particular concerns relating to the following sections of the Code:

- 2.2.2.2 The precautionary principle must be applied to the conservation of biodiversity values.
- 2.2.2.4 During planning identify biodiversity values listed in the Management Standards and Procedures.
- 2.2.2.5 Protect areas excluded from harvesting from the impacts of timber harvesting operations.

The VNPA has previously submitted reports for threatened species in the Mt. Cole area and it is still unclear if pre-logging survey work for threatened species is undertaken by DELWP within the West RFA area.

'Table 3 Fixed FMZ rules for fauna' on page 30 of the Planning Standards for timber harvesting operations in Victoria's State forests 2014 sets out as a zoning management action that a target of 25 Powerful Owl Management Areas (POMA) should be identified and maintained across public land in the Midlands FMA.

It is unclear if any of these POMA have been established at Mt. Cole as VBA records of Powerful Owl are found within areas scheduled to be logged. This information has not been made publicly available.

Further, it is stated that POMA allocations are to be reviewed "when records of higher priority are discovered subject to other management objectives." Song meter data of repeated Powerful Owl records in Mt. Cole are close to 1996 VBA records, which indicate this area is of high importance to Powerful Owls in the Midlands FMA.

The 1996 records and new 2020 song meter detections are in forests scheduled for logging. This highlights a need to review and update POMA in the Midlands FMA and shows the importance of accepting the VEAC recommendation of including this area for better protection within a Mount Buangor National Park.

'Table 4 Detection based FMZ rules for fauna' on page 56 of the planning standards sets out as a zoning management action that VicForests should "Establish a SMA of 250 m radius over verified nesting and roosting sites, unless already protected".

VNPA detections of Powerful Owls in areas scheduled for logging indicate that further survey work will be required to identify these sites and again highlights the importance of permanent protection for these areas as proposed by VEAC.



SURVEY RESULTS

Song meters deployed by citizen scientists to listen for rare and threatened fauna species within Mount Cole State Forest detected significant populations of the state listed Powerful Owl as well as a population of Koala.

Multiple recordings were detected of both Powerful Owl and Koala. A full list of detected species is presented in Table 1. Spectrograms of species identified during the analysis are included in Figures 1, 2, 3 and 4.

Map 1. shows the locations of Song meters in the context of the VEAC recommendations and the high density of logging activity.

Map 2. displays the approximate home range of Powerful Owls overlaid with VNPA Powerful Owl detections and Victorian Biodiversity Atlas and Atlas of Living Australia records.

Map 3. displays Mt. Cole conservation values including records of Powerful Owl, Mt Cole Grevillea and Koalas, overlaid with logging coupes and VEAC proposals.



Species Common Name	Species Scientific Name	Mt. Cole Site 1 (Card 1a)	Mt. Cole Site 2 (Card 2a)	Mt. Cole Site 3 (Card 3a)
Australian Wood Duck	<i>Chenonetta jubata</i>	Undetected	Present	Undetected
Laughing Kookaburra	<i>Dacelonovaeguineae</i>	Present	Present	Present
Southern Brown Tree Frog	<i>Litoriaewingii</i>	Present	Present	Absent
Barking Owl	<i>Ninoxconnivens</i>	Undetected	Undetected	Undetected
Southern Boobook Owl	<i>Ninoxnovaeseelandiae</i>	Present	Present	Undetected
Powerful Owl	<i>Ninoxstrenua</i>	Undetected	Present (Male & Female)	Present (Male & Female)
Yellow-bellied Glider	<i>Petaurus australis</i>	Undetected	Undetected	Undetected
Kreff's Glider (formally Sugar Glider)	<i>Petaurusnotatus</i>	Present	Present	Present
Koala	<i>Phascolarctoscinereus</i>	Present (Male)	Present (Male & Female)	Undetected

Table 1. Mt. Cole Song Meter Detection 13/6/2020 to 25/7/2020. (Target species in Bold)

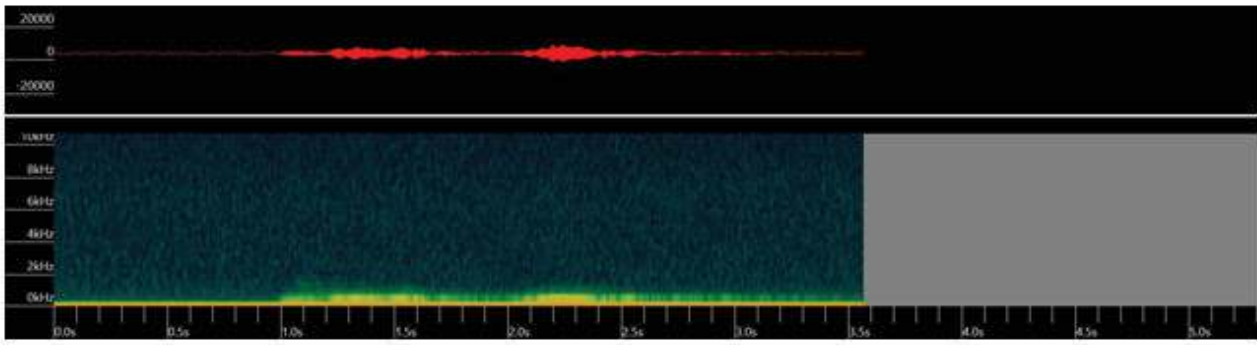


Figure 1. Powerful Owl call detected at Site 2

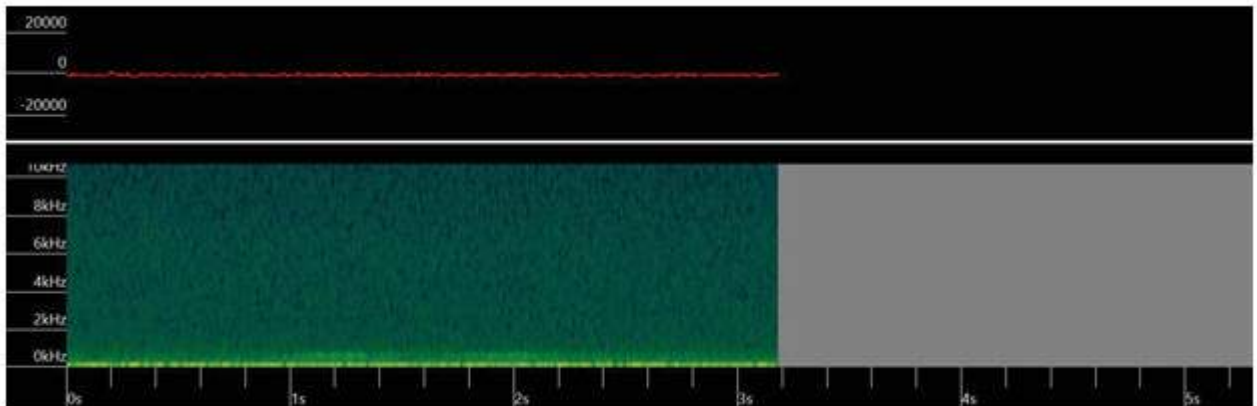


Figure 2. Powerful Owl call detected at Site 3

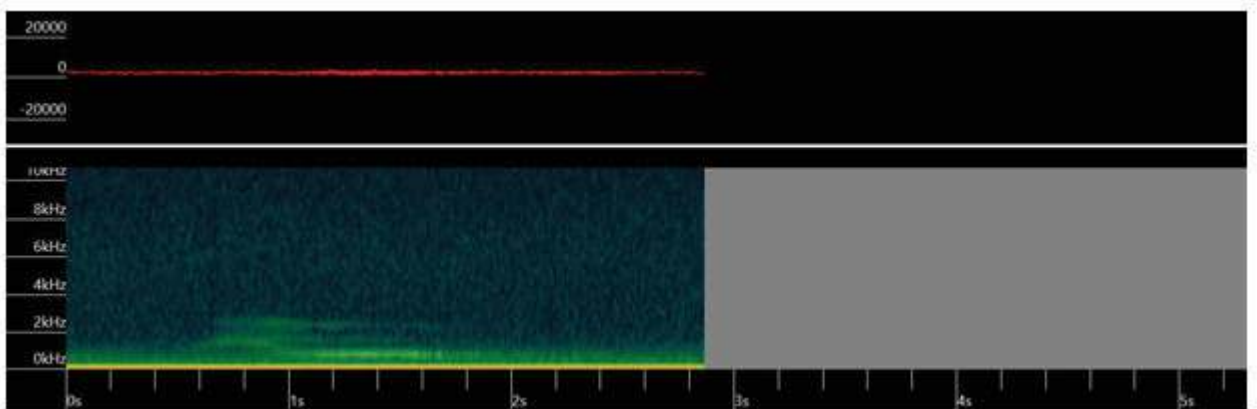


Figure 3. Female Koala detected at Site 2

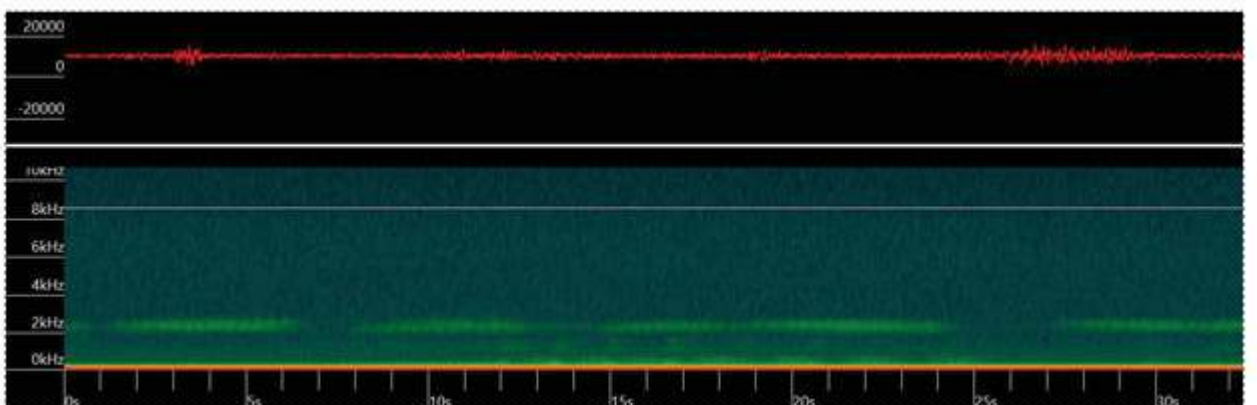
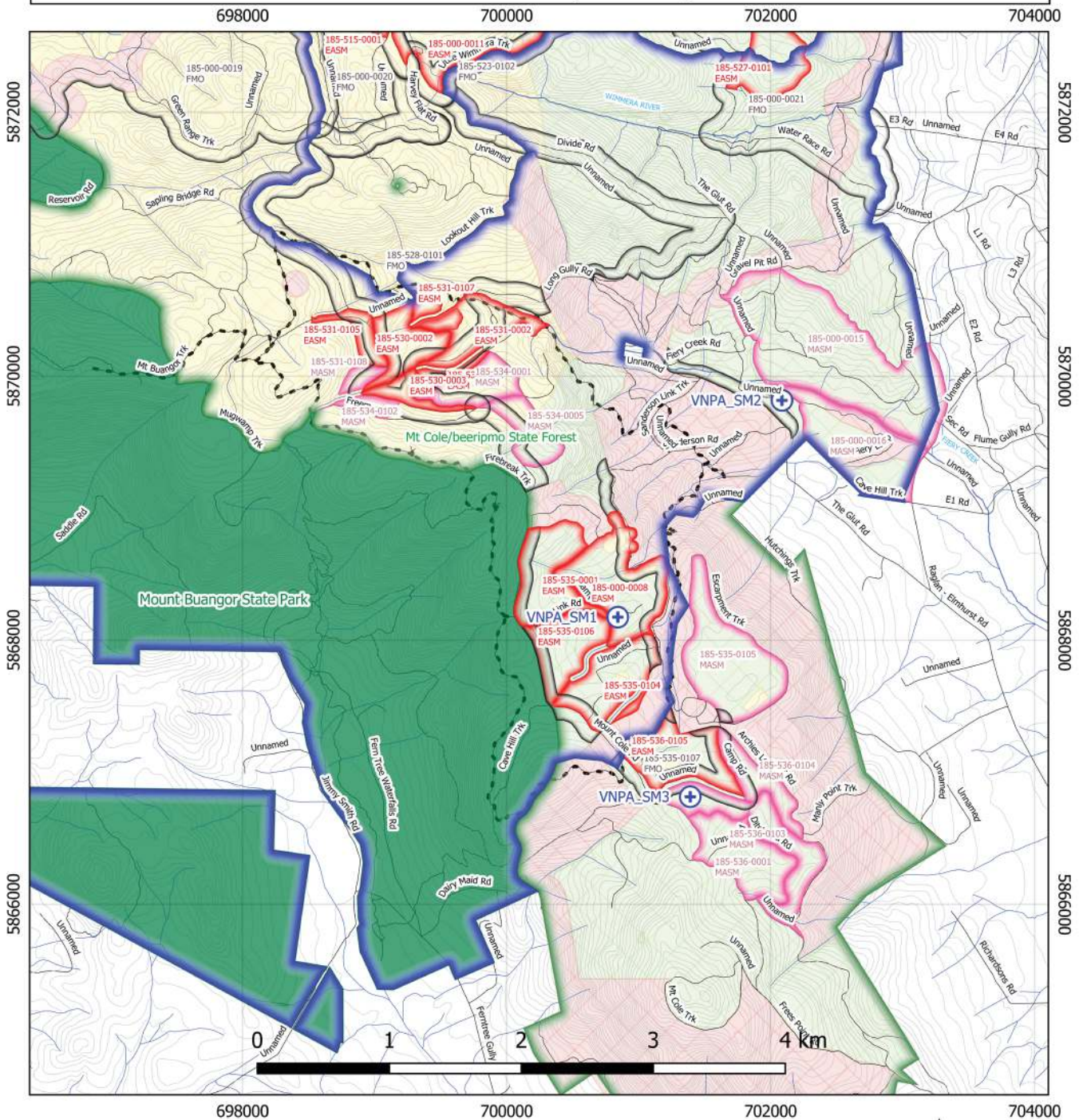



Figure 4. Male Koala detected at Site 2

Mt Cole Song Meter Locations; Public Land Management; Victorian Environmental Assessment Council (VEAC) Central West Investigation: Recommended Mount Buangor National Park Boundary; VicForests Timber Utilisation Plan (TUP) December 2019; Forest Management Zoning (FMZ); Contours, Roads, Watercourses & the Beeripmo Walking Trail.



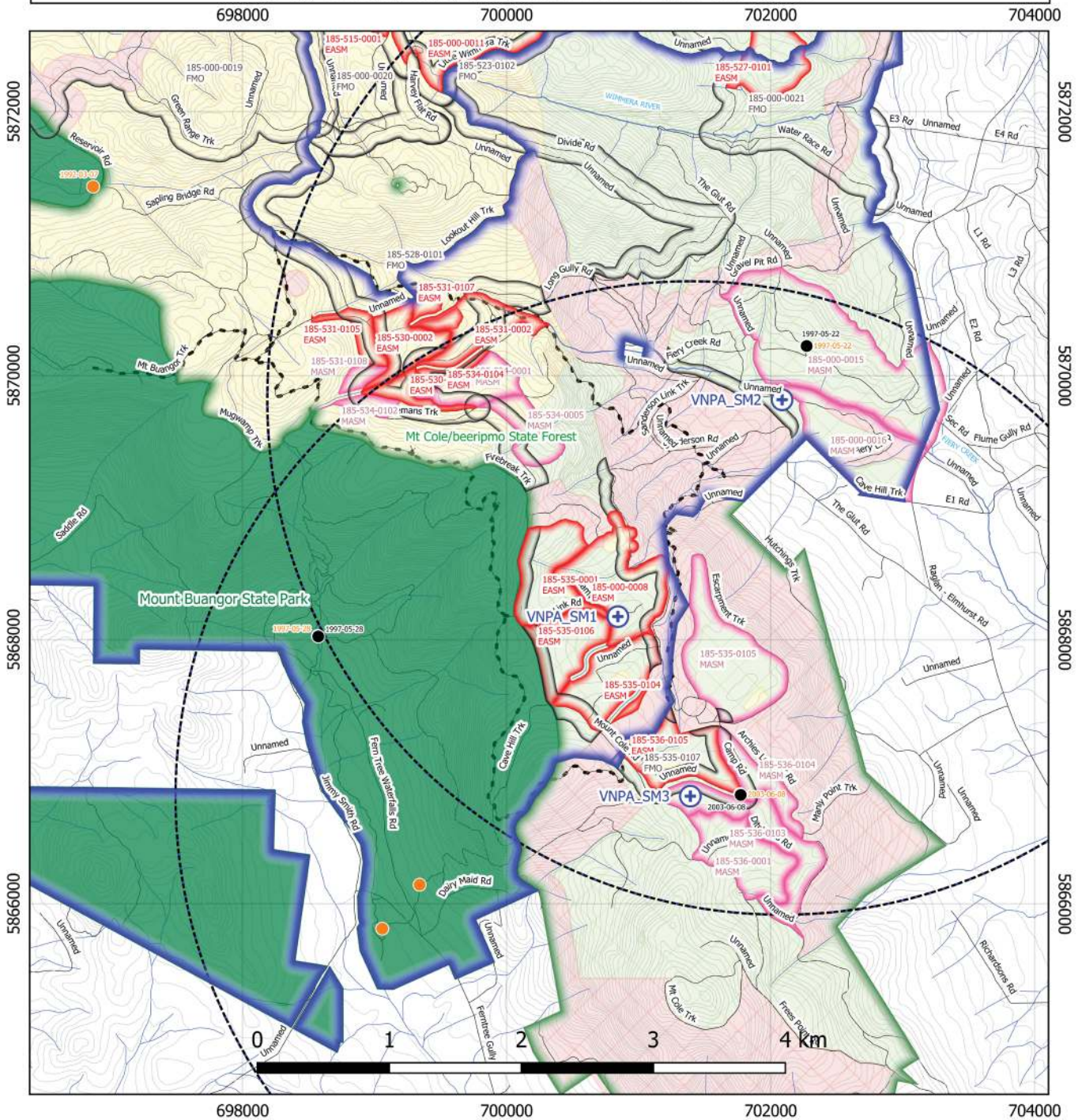
VNPA	VicForests TUP	Other
Song Meter Locations	Even-aged stand management (EASM)	Contours
Public Land Management	Multi-aged stand management (MASM)	Roads
State Forest	Forest Management Operations (FMO)	Watercourses
State Park	Forest Management Zoning (FMZ)	Beeripmo Walking Trail
VEAC Central West Investigation: Recommendations	General Management Zone (GMZ)	
Mount Buangor National Park	Special Management Zone (SMZ)	
	Special Protection Zone (SPZ)	




Created by Blake Nisbet
22/01/2021
VNPA
GDA/MGA Zone 54 H
QGIS

Map 1. Waypoint locations of song meters deployed by VNPA volunteers, VEAC recommendations and logging

Mt Cole Song Meter Locations; Public Land Management; Victorian Environmental Assessment Council (VEAC) Central West Investigation: Recommended Mount Buangor National Park Boundary; VicForests Timber Utilisation Plan (TUP) December 2019; Approximate Home Ranges of 4774 Ha (Soderquist & Gibbons, 2007) around the Powerful Owl Detection Sites; Existing Powerful Records from the Victorian Biodiversity Atlas (VBA) & the Atlas Of Living Australia (ALA); Forest Management Zoning (FMZ); Contours, Roads, Watercourses & the Beeripmo Walking Trail.



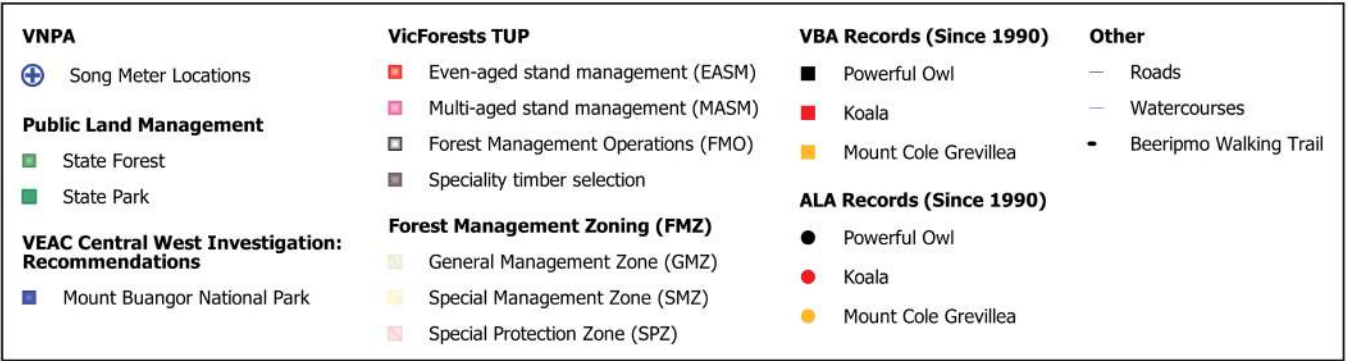
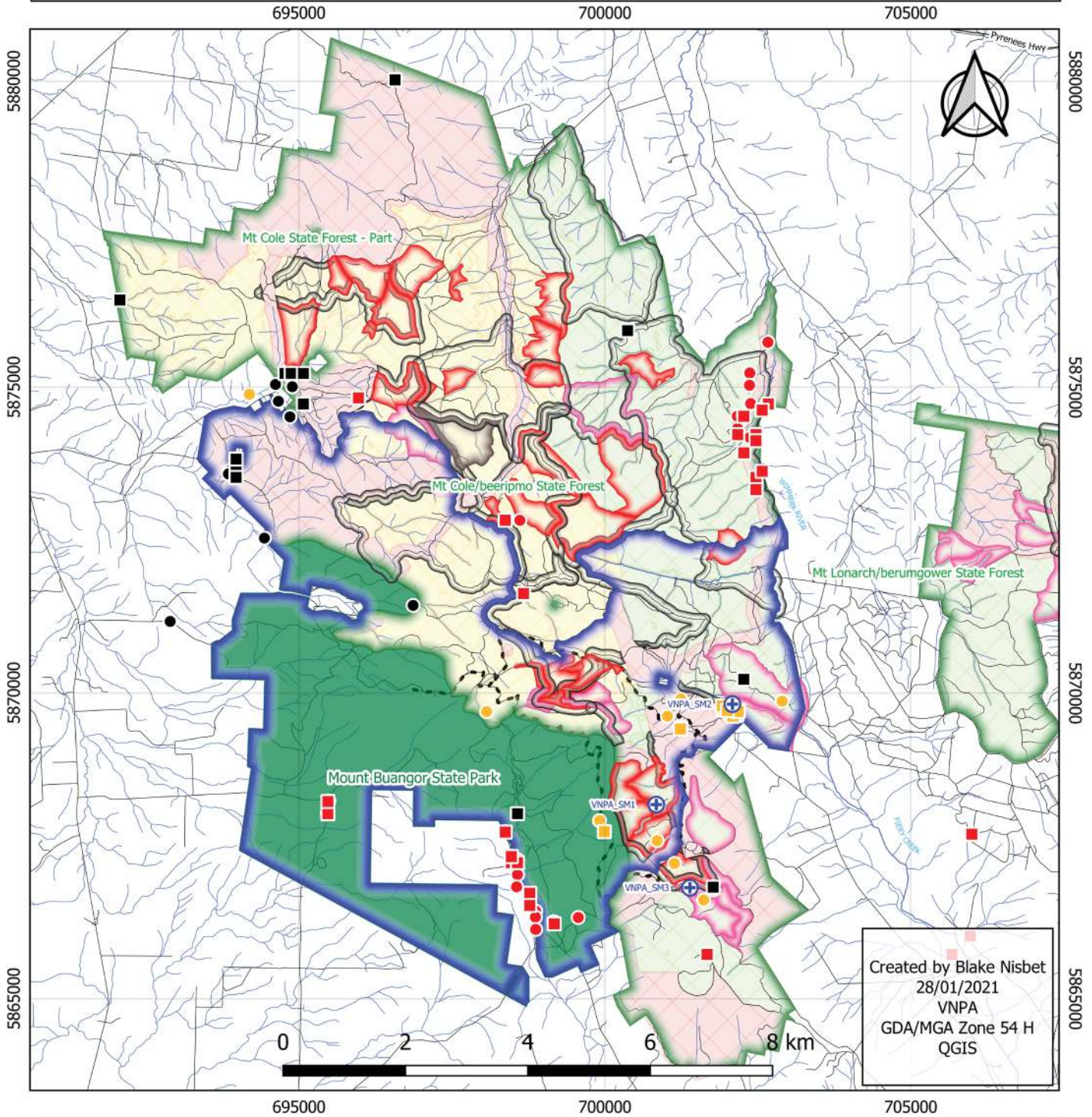
<p>VNPA</p> <ul style="list-style-type: none"> Song Meter Locations <p>Public Land Management</p> <ul style="list-style-type: none"> State Forest State Park <p>VEAC Central West Investigation: Recommendations</p> <ul style="list-style-type: none"> Mount Buangor National Park 	<p>VicForests TUP</p> <ul style="list-style-type: none"> Even-aged stand management (EASM) Multi-aged stand management (MASM) Forest Management Operations (FMO) <p>Powerful Owl</p> <ul style="list-style-type: none"> Approximate Home Range around Detection Sites (4774 Ha) VBA Records ALA Records 	<p>Forest Management Zoning (FMZ)</p> <ul style="list-style-type: none"> General Management Zone (GMZ) Special Management Zone (SMZ) Special Protection Zone (SPZ) <p>Other</p> <ul style="list-style-type: none"> Contours Roads Watercourses Beeripmo Walking Trail
--	---	---



Created by Blake Nisbet
22/01/2021
VNPA
GDA/MGA Zone 54 H
QGIS

Map 2. Approximate home range of Powerful Owl 4774Ha (Soderquist & Gibbons, 2007) overlaid with VNPA Powerful Owl detections and VBA and ALA records.

Mt Cole Song Meter Locations; Public Land Management; Victorian Environmental Assessment Council (VEAC) Central West Investigation: Recommended Mount Buangor National Park Boundary; VicForests Timber Utilisation Plan (TUP) December 2019; Forest Management Zoning (FMZ); Powerful Owl, Koala and Mt Cole Grevillea Records from the Victorian Biodiversity Atlas (VBA) & Atlas Of Living Australia (ALA) Since 1990; Roads, Watercourses & the Beeripmo Walking Trail.



Map 3. Mt. Cole conservation values overlaid on logging coupes and VEAC proposal. Records of Powerful Owl, Mt Cole Grevillea and Koala shown.

DISCUSSION

As supported by the findings of song meter deployment at Mt. Cole, the area is of high conservation significance and home to iconic fauna species such as the Koala and Australia's largest owl species, the Powerful Owl.

This is in line with the Assessment of matters pertaining to the modernisation of Victoria's Regional Forest Agreements (State of Victoria & Commonwealth of Australia, 2019) which found that the West RFA area is high in conservation and biodiversity values.

The West RFA region has the highest number of nationally listed (EPBC Act) species of any RFA region in Victoria with 115 listed species, more than double those in East Gippsland and Central Highlands. This includes the highest number (sixteen) of critically endangered species of any RFA region.

Of great concern is the lack of Management Prescriptions for Koala within the Midlands FMA. Although Koala are considered secure in Victoria, the species is under considerable pressure from habitat loss and fragmentation as well as increased fire events like the 2019/20 bushfires.

"Because the Koala is more secure in Victoria than in the other states, Victoria carries a heavy responsibility to manage its Koala populations to ensure that the species continues to flourish in the wild" (Department of Sustainability and Environment, 2004). The lack of prescription also raises great concern about the welfare of Koalas in areas scheduled for logging.

The presence of Powerful Owls across 2 song meter sites is of great hope for the species but at the same time it raises concerns about native forest logging causing the loss of hollow bearing trees, food foraging areas and roosting trees. Mt. Cole is a green refuge for Powerful Owls and other threatened species in one of the most cleared landscapes in Victoria.

As shown in Map 2, detections of Powerful Owls overlaid with their 4774 ha approximate home range (Soderquist & Gibbons, 2007) highlights the importance of accepting the VEAC recommendations for Mt. Cole to permanently protect this haven for owls.

Other species recorded were Krefft's Glider (formally Sugar Glider) (*Petaurus notatus*), Southern Boobook Owl

(*Ninox novaeseelandiae*), Laughing Kookaburra (*Dacelo novaeguineae*) and Australian Wood Duck (*Chenonetta jubata*) all of which are dependent on hollow bearing trees at times of their life cycles. This highlights the importance of protecting hollow bearing trees within the forest of Mt. Cole. The loss of hollow-bearing trees from Victorian native forests and woodlands is listed as a Potentially Threatening Process under the *Flora and Fauna Guarantee Act 1988*. Hollows can take many decades or centuries to form and hollow bearing trees are damaged and destroyed during logging operations.

Various species of threatened flora and fauna are present within the Mt. Cole State Forest. The cavalier attitude of VicForests towards conservation values, as well as the lack of independent qualified survey work and oversight, is putting Victoria's biodiversity at risk in the west.

The song meter findings underline the importance of accepting the VEAC Central West investigation recommendations to incorporate high conservation value areas of Mount Cole State Forest into the adjoining Mount Buangor National Park to protect the many natural and recreational areas at Mt. Cole from damaging threatening processes such as logging.



Southern Brown Tree Frog
Museum Victoria

RECOMMENDATIONS

THE VNPA RECOMMENDS THE FOLLOWING:

That VicForests cease all active and future logging at Mt. Cole within the area assessed by VEAC as being of high quality and worthy of protection in a national park.

That the Victorian Environmental Assessment Council (VEAC) Central West Investigation (June 2019) recommendations be accepted in full and that high conservation value forests at Mount Cole be added to the Mount Buangor National Park. As highlighted by Map 3, this area of Mt. Cole contains populations of Mt. Cole Grevillea, Powerful Owls and Koala.

That the Powerful Owl Management Areas (POMA) for the Midlands FMA be reviewed in response to repeated records of Powerful Owls in areas scheduled for logging at Mount Cole State Forest. Acoustic redetections of Powerful Owls at Mt. Cole have been recorded and the population is threatened by a rise in intensity of logging operations at Mt. Cole including the introduction of even-aged stand management/clearfell logging.

That a prescriptions for management be written for the presence of Koalas within areas scheduled to be logged in the Midlands FMA (as there currently isn't one).

That surveys are conducted by independent and suitably qualified persons in Mt. Cole and the rest of the West RFA area and that the survey results are publicly released.

That surveying be undertaken over an adequate period to detect species that appear seasonally such as orchids and wildflowers.

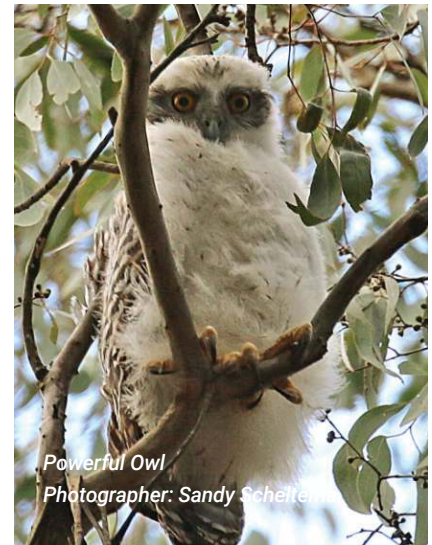
That VicForests be investigated for breaches of The Code of Practice for Timber Production under Section 2.2.2 dealing with Conservation of Biodiversity, Mandatory Actions, Addressing biodiversity conservation risks considering scientific knowledge (page 34) for logging operation in the state's west particularly:

2.2.2.2 The precautionary principle must be applied to the conservation of biodiversity values.

2.2.2.4 During planning identify biodiversity values listed in the Management Standards and Procedures

2.2.2.5 Protect areas excluded from harvesting from the impacts of timber harvesting operation

4.6.7.1 Maintain a CAR reserve system within the FMAs consistent with the JANIS criteria



If POMA and associated formal or informal protection zones for threatened species exist at Mt. Cole, the details of these Special Protect Zones (SPZs) and the reasons for their establishment should be publicly released.

It is currently unclear if these Areas and Zones are defined at Mt Cole.

REFERENCES

Department of Environment and Primary Industries (2014). Code of Practice for Timber Production 2014. https://www.forestsandreserves.vic.gov.au/__data/assets/pdf_file/0016/29311/Code-of-Practice-for-Timber-Production-2014.pdf

Department of Environment and Primary Industries (2014). Planning Standards for timber harvesting operations in Victoria's State forests. https://www.forestsandreserves.vic.gov.au/__data/assets/pdf_file/0021/29307/Planning-Standards-for-timber-harvesting-operations-in-Vics-State-forests-2014.pdf

Department of Sustainability and Environment (2004). Victoria's Koala Management Strategy. <https://www.wildlife.vic.gov.au/our-wildlife/koalas>

State of Victoria & Commonwealth of Australia (2019). Assessment of matters pertaining to the modernisation of Victoria's Regional Forest Agreements 2019. https://www.agriculture.gov.au/sites/default/files/documents/qid78487_att_a_-_further_assessment_of_matters_report_2019.pdf

Victorian Environmental Assessment Council (2019). Central West Investigation Final Report. [http://www.veac.vic.gov.au/documents/VEAC%20Central%20West%20report\(LR\).pdf](http://www.veac.vic.gov.au/documents/VEAC%20Central%20West%20report(LR).pdf)

Department of Environment, Land, Water and Planning (2020). The Threatened Species and Communities Risk Assessment – Victoria's Regional Forest Agreements. <https://www.environment.vic.gov.au/conserving-threatened-species/threatened-species-and-communities-risk-assessment>

Victorian National Parks Association (2017). Western Forest & Woodlands at risk: An assessment of the ecological implications of a new Timber Utilisation Plan for Western Victoria. <https://vnpa.org.au/wp-content/uploads/2018/11/Western-Forests-and-Woodlands-at-Risk-Full-Report.pdf>

Soderquist, T. & Gibbons, D.(2007). Home-range of the Powerful Owl (*Ninox strenua*) in dry sclerophyll forest. *Emu* 107(3) 177-184