

East Gippsland Rainforest Sites of Significance

Post Bush-fire condition assessments



Project summary and condition assessment overview

In March 2022 eight Rainforest Sites of Significance (RFSOS) in East Gippsland, affected by the 2019-2020 summer bushfires, were assessed for post fire ecological recovery, the presence of weeds, deer sign and the persistence of key rainforest characteristics.

RFSOS assessments involved a vehicle-based component that inspected all of the safely navigable roads and tracks within and bordering each RFSOS, as well as a walking component that inspected each of the main mapped rainforest stands within the “Priority 1” areas of each site.

Throughout each assessment component photographs, notes and location data of target weeds, deer sign, rainforest and general site condition as well as other significant findings (including the presence of rare or threatened flora) were recorded.

This report presents the key findings and results of each of the RFSOS assessments as a “Condition Assessment Statement” for each site that includes notes, lists, maps and spatial data of weed species presence, deer sign encountered, rainforest and general site condition and rare or threatened flora species encountered.

The 8 Rainforest Sites of Significance assessed were:

Site Name	Site ID
• Mt Billy, McKenzie River	EG64
• Pheasant Creek	EG65
• Murrindal	EG29
• Mt Statham	EG30
• Riddle Creek	EG56
• East Thurra	EG105
• Brown Creek (Thurra River Road)	EG102
• Double Creek South Branch - Miners Tk	EG112

Cover: Combienbar RFSOS (photo A. Lincoln)

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1 Aim and Project Brief

The East Gippsland Conservation Management Network provided a project brief with the following aim which formed the basis of the survey design, data collection and results presentation for this project:

“To assist in building a knowledge base on post-fire rainforest condition and identify priority areas where invasive exotic plants, eucalypt encroachment and deer may require future management interventions.

This work forms a supplementary component under theme four of Victoria’s Bushfire Emergency Biodiversity Response and Recovery program and has been generously supported by the Ross Trust.

Eight ‘Rainforest Sites of Significance’ are to be assessed for fire, weeds and deer impacts. With a focus on ‘priority 1’ areas or stands of the largest pre fire spatial extent, as delineated in ‘RFSOS100’, ‘Rainfor2019’.

Roads and tracks that form the catchment boundary of target RFSOS’s or are

contained within the catchment boundary are also to be assessed.”

The following list of target weed species to be searched for was provided:

#	Common Name	Scientific Name
1	African Boxthorn	<i>Lycium barbarum</i>
2	African Lovegrass	<i>Eragrostis curvula</i>
3	Agapanthus sp.	[<i>Agapanthus praecox</i> subsp. <i>Orientalis</i>]
4	Blackberry	<i>Rubis fruticosus</i> ssp. <i>Agg.</i>
5	Blue periwinkle	<i>Vinca major</i>
6	Boneseed	<i>Chrysanthemoides monilifera</i> [subsp. <i>monilifera</i>]
7	Bitou Bush	[<i>Chrysanthemoides monilifera</i> subsp. <i>rotundata</i>]
8	Cape Broom	<i>Genista monspessulana</i>
9	Cape Ivy	<i>Delairea odorata</i>
10	English Ivy	<i>Hedera helix</i>
11	Cotoneaster spp.	<i>Cotoneaster</i> spp.
12	Dolichos pea	<i>Dipogon lignosus</i>
13	Gorse	<i>Ulex europaeus</i>
14	Himalayan Honeysuckle	<i>Leycesteria formosa</i>
15	Ink Weed	<i>Phytolacca octandra</i>
16	Madeira Vine	<i>Anredera cordifolia</i>
17	Madeira Winter Cherry	<i>Solanum pseudocapsicum</i>
18	Mirror Bush	<i>Coprosma repens</i>
19	Privet	<i>Ligustrum lucidum</i>
20	Ragwort	<i>Jacobaea vulgaris</i>
21	Spanish Heath	<i>Erica lusitanica</i>
22	St. John's Wort	<i>Hypericum perforatum</i>
23	Thistle spp.	Various
24	Tutsan	<i>Hypericum androsaemum</i>
25	Wandering Tradescantia	<i>Tradescantia fluminensis</i>
26	Watsonia spp.	<i>Watsonia</i> spp.

Documentation for the project was to include photographs, notes and spatial data recording of assessment locations, deer sign and weed locations. Reporting for the project involves preparation of “Condition assessment statements” (referred to herein as “RFSOS Condition Assessment Statements”) for each site within a brief report detailing significant findings and supporting evidence.

The scope of the project brief allowed for an average of 2 days site inspection for each of the 10 selected RFSOS.

Methods

1.1 Data sources

From site selection to final map production spatial data resources were used to select sites, locate RFSOS, priority areas and mapped rainforest stands, to provide background information and context (such as satellite and aerial imagery, previous disturbance histories (logging and earlier fires), and to navigate to and within RFSOS and rainforest stands in the field. Existing records of introduced weeds as well as rare and threatened flora were also included.

Pre-existing spatial data resources relied upon throughout this project (unless specified otherwise¹) have been obtained from the Victorian government's repositories of Victorian public spatial data sourced from <http://services.land.vic.gov.au/SpatialDatamart/> and/or <https://datashare.maps.vic.gov.au/>.²

Google Satellite imagery³ of each of the RFSOS was also accessed through the GIS system QGIS which was used to produce all maps used for this project.⁴

Identification of flora species throughout this project was undertaken with primary reference to the online "VicFlora" at the following website: <https://vicflora.rbg.vic.gov.au/> (VicFlora)⁵.

Flora species conservation status reflects the current status as listed in the June 2022 Flora and Fauna Guarantee Act 1988 (the FFG Act)

"Threatened List" accessed at

<https://www.environment.vic.gov.au/conserving-threatened-species/threatened-list>.⁶

1.2 Site selection

Of the 190 Rainforest Sites of Significance recognised within Victoria, 122 are found in the East Gippsland Local Government Area (EG Shire). Of these 122 RFSOS in the EG Shire approximately 100 were within or adjacent to the footprint of the 2019-2020 summer bushfires. 31 of these 100 sites had already been surveyed prior to the commencement of this project (including 10 surveyed by EGCMN in 2021). Of the remaining ~70 sites, 8 more were selected that had impacts from varying fire severity classes in the 2019-2020 summer bushfires as well a selection of differing rainforest types. The eight sites are located across the EG Shire, from near Gelantipy area in the west, to near Mallacoota in the east

Spatial data files used within this project are listed at end of this document and available upon request.

1 For example: "Timber_Release_Plan" [spatial data file], VicForests

2 "Spatial Datamart", <http://services.land.vic.gov.au/SpatialDatamart/>, State Government of Victoria.
"Data Share", <http://services.land.vic.gov.au/SpatialDatamart/>, State Government of Victoria

3 "Google Satellite imagery",
<https://mtl.google.com/vt/lyrs=s&x={x}&y={y}&z={z}>

4 "QGIS A Free and Open Source Geographic Information System", <https://qgis.org/en/site/>
"VicFlora", <https://vicflora.rbg.vic.gov.au/>, Royal Botanic Gardens Board Victoria
6 Flora and Fauna Guarantee Act 1988 - Threatened List June 2022, <https://www.environment.vic.gov.au/conserving-threatened-species/threatened-list>, State Government of Victoria, accessed 21/08/2022

The 8 Rainforest Sites of Significance selected and assessed were:

#	Site Name	Site ID	#	Site Name	Site ID
1	Mt Billy, McKenzie River	EG64	5	Riddle Creek	EG56
2	Pheasant Creek	EG65	6	East Thurra	EG105
3	Murrindal	EG29	7	Brown Creek (Thurra River Road)	EG102
4	Mt Statham	EG30	8	Double Creek South Branch - Miners Tk	EG112

1.3 Vehicle based assessments

Vehicle based assessments involved inspection of all the safely trafficable roads and tracks within and bordering each RFSOS. This was achieved by a two-person vehicle-based crew with 1 person slowly driving each road while another recorded target weed species encountered from the vehicle as well as stopping to undertake detailed inspections of drains, stream crossings, culvert outlets, road intersections and other significantly disturbed sites.

1.4 Walking based assessments

Walking based assessments involved walking through the mapped rainforest stands delineated in the spatial data file RAINFOR within “Priority 1” (P1) areas of each RFSOS. P1 areas are delineated in the spatial data file RFSOS100. For some larger sites multiple P1 areas exist within the RFSOS and each of these were walked where possible. Project time constraints meant that for some large sites sections of very large P1 areas were not able to be walked and fully inspected.

While walking in and around rainforest stands photographs, notes, and location data using hand held GPS devices were recorded of target weed species, deer sign, rainforest and general site condition as well as any rare or threatened flora or other significant findings that were encountered.

2 Results

For each RFSOS field assessment a “Rainforest Site Of Significance Condition Assessment Statement” (RFSOS Condition Assessment Statement) has been produced. These RFSOS Condition Assessment Statements are presented at the end of this report at Chapters 4-11. Each RFSOS Condition Assessment Statement consists of the following format:

- Spatial data of rare or threatened flora and other significant findings (see Appendix A)

RFSOS site map showing weed, deer, rare plant locations

- Site map showing weed, deer, rare plant locations (see also Appendix E)

2.1 RFSOS Condition Assessment Statement format

Rainforest Site of Significance summary (Site name)

- RFSOS site overview (rainforest, fire impacts and disturbances summary)
- Roads/tracks surveyed
- P1 areas surveyed summary
- Notes and photos of rainforest and general site condition (see also Appendix A-C)
- Spatial data of rainforest and general site condition notes (see Appendix A)

Weeds (Site name)

- Notes and photos of the presence and abundance of weeds (see also Appendix A-C)
- Spatial data of locations of weeds recorded and corresponding notes (see Appendix A)

Deer (Site name)

- Notes and photos of the presence and abundance of deer sign (see also Appendix A-C)
- Spatial data of locations of deer sign encountered (see Appendix A)

Rare or threatened flora and other significant findings (Site name)

- Notes and photos of rare or threatened flora and other significant findings (see also Appendix A-C)

2.2 Appendices

Accompanying this report are a series of appendices that include information that form part of the RFSOS Condition Assessment Statements (Appendices A-E). Appendix A contains the spatial data files and Appendix B a spreadsheet of the locations of target weeds, deer sign, rainforest and photo location notes. Appendix C contains photographs of some of the values recorded. Appendix D contains a list of specific flora species recorded within this project. This appendix sets out the taxon naming conventions used throughout this project and other relevant matters concerning flora species encountered. This includes flora species observed to have been browsed by deer and other flora species discussed within this report. Appendix E contains maps of each site displaying the weeds, deer and rare or threatened flora locations.

2.2.1 List of Appendices

- Appendix A Spatial data file of locations of survey records
- Appendix B Spreadsheet of locations and notes of survey records
- Appendix C Photographs of survey records and site condition
- Appendix D Table of flora species discussed within report
- Appendix E Maps of weed, deer, flora and photo locations

3 Mt Billy, McKenzie River (RFSOS Site: EG52) Condition Assessment Statement

3.1 Rainforest Site of Significance summary (Mt Billy, McKenzie River)

3.1.1 RFSOS site overview (rainforest, fire impacts and disturbances summary)

The 153-hectare Mt Billy, McKenzie River “Regional” RFSOS contains 28 hectares of mapped rainforest, all of which is mapped as Warm Temperate Rainforest (RAINFOR spatial dataset).

The 2019-2020 summer fires affected 88% (134 ha) of the RFSOS and 80% (22 ha) of the rainforest within the RFSOS. 37% (10 ha) of the rainforest was impacted by higher severity fire (medium and high canopy scorch and canopy burnt), 43% (12 ha) by lower severity fire (low canopy scorch but understorey burnt) and 20% (6 ha) remaining unburnt (RAINFOR & FIRE_SEV spatial datasets).

Previously recorded disturbances at the site include a 1959 bushfire covering most of the RFSOS, a 2007 bushfire in the northern sections of the RFSOS and extensive high intensity logging in the northern and central sections from 1969 to 2007 (FIRE_HISTORY and LOGSEASON spatial datasets).

The southernmost section of the RFSOS is bordered by the McKenzie River adjacent a farm paddock, which at the time of field inspection contained cattle.

3.1.2 Roads/tracks surveyed

The following roads and tracks within or adjacent to the Mt Billy, McKenzie River RFSOS were surveyed as part of the vehicle-based assessment:

Road name	Survey status/note
Hazel Track	Surveyed
Hazelwood Track	Surveyed
2 Unnamed tracks within RFSOS site	Surveyed

3.1.3 P1 areas surveyed summary

The Mt Billy, McKenzie River RFSOS has one “Priority 1” (**P1**) area (mapped in the RFSOS100 spatial dataset) that was surveyed as part of the walking-based assessment. This P1 area is 82 hectares in total and contains 20 hectares of mapped rainforest (RAINFOR) mostly on small tributaries adjacent the McKenzie River.

3.1.4 Notes and photos of rainforest and general site condition

While the majority of the Mt Billy, McKenzie River RFSOS catchment area was only affected by lower severity fire, western sections of the site, including about a third of the P1 area rainforest within the site was affected by high severity fire. The north west of the RFSOS catchment is bordered by a recently logged forest area that was also severely burnt.



Figure 1: MTB002PA_Burnt sclerophyll forest in north west edge of RFSOS

This high severity burn area extends in to a large, expansive rainforest patch of approximately 25 hectares (some of which is outside the RFSOS). This stand of rainforest was subject to intense rainforest canopy crown fire damage that in some sections, two years after the fires, had little or no signs of resprouting in the crown. Pre-fire rainforest in this area, which extended over a broad spur away from the more incised gullies, appeared not to have contained a continuous rainforest canopy trees of larger sizes relative to those found in nearby more protected gullies. Lower strata regeneration in this area included rough Tree-ferns, a high proportion of disturbance related species such as Blanket Leaf, Hazel Pomaderris, Cassinia spp., Victorian Christmas Bush, and Kangaroo Apples as well as differential rainforest species such as Rose-leaf Bramble, Milk Vine and basally resprouting Lilly Pilly. Regenerating eucalypt saplings in these areas were also found.



Figure 2: MTB051PB_High severity burnt P1 rainforest area



Figure 3: MTB054PB_High severity burnt P1 rainforest area

Closer to the more central tributaries of the RFSOS in the P1 area, where very large continuous rainforest canopy trees were observed, fire impacts were less severe and increased Lilly Pilly canopy resprouting was observed.



Figure 4: MTB083PA_High severity burnt P1 rainforest area. Lilly Pilly re-sprouting basally



Figure 5: MTB077PA_High severity burnt P1 rainforest area with rainforest and eucalypt regeneration



Figure 6: MTB077PA_Lilly Pilly canopy resprouting

Multiple rainforest sections persist within the RFSOS which were either unburnt or subject to only edge effects from lower severity fire in adjacent eucalypt forest, some of which were found to be supporting very large canopy tree individuals. One central patch of unburnt rainforest included very large Kanooka, Jungle Grape and Musk Daisy-bush. In the south of the RFSOS a very large large Mock-olive was found in alluvial like rainforest adjacent the McKenzie River.



Figure 7: MTB029PA_Very Large Jungle grape in unburnt rainforest patch



Figure 8: MTB022PA_Very large Musk Daisy bush in rainforest adjacent nearby understorey fire



Figure 9: MTB087PA_Very large Large Mock-olive in surviving rainforest area adjacent high severity burn

3.2 Weeds (Mt Billy, McKenzie River)

3.2.1 Notes and photos on the presence and abundance of target weeds

Blackberry, Thistle, Fleabane and Black-fruit Nightshades were encountered in the Mt Billy, McKenzie River RFSOS (see also Appendices A–E and the map below).

Isolated Blackberries were found as scattered individuals throughout the site, particularly at sites of recent disturbance including from the 2019-20 fire, and the most significant patch was found at a small stream crossing on an unnamed track at the south-east of the site.

Thistles and Fleabane were also found as scattered individuals throughout the site and were most prolific in the high severity burnt rainforest sections in the west and Black-fruit Nightshades were encountered mostly in fire disturbed rainforest areas.



3.3 Deer (Mt Billy, McKenzie River)

3.3.1 Notes and photos on the presence and abundance of deer sign

Deer sign, including tracks, scat, rubbing and wallows were recorded at 18 locations throughout the Mt Billy, McKenzie River RFSOS (see also Appendices A–E and the map below). Most significantly this included observations of deer rubbing and browsing on rainforest canopy species, including deer rubs on Lilly Pilly, Djelwuck and Sweet Pittosporum and two wallows in the south east of the site.



3.4 Rare or threatened flora and other significant findings (Mt Billy, McKenzie River)

3.4.1 Notes and photos of rare or threatened flora and other significant findings

Throughout the Mt Billy, McKenzie River RFSOS assessment the following four “Victorian Rare or Threatened” (VROT) flora species were recorded (see also Appendices A–E and the map below):

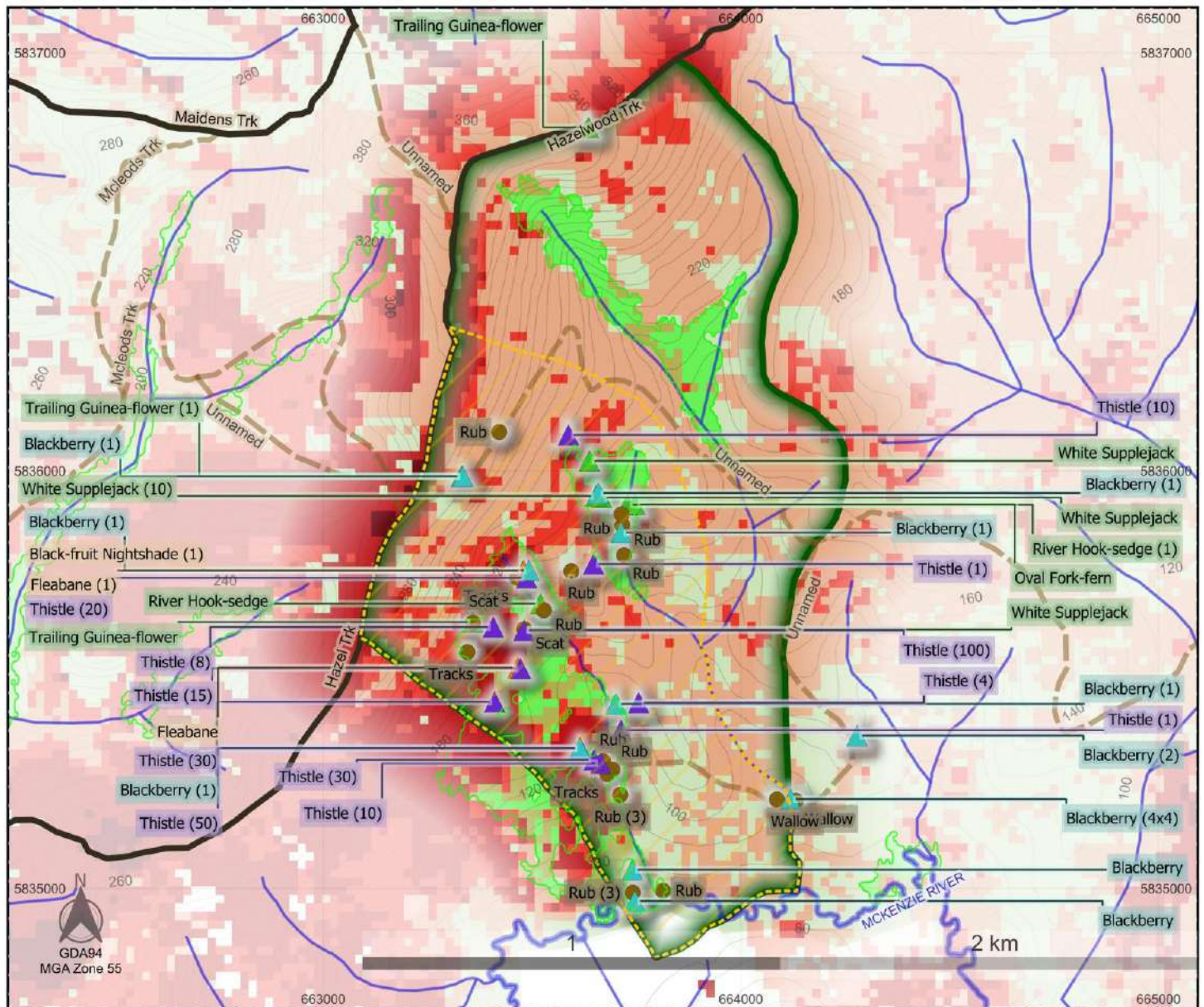
Common Name	Scientific Name	Victorian Advisory List (2014)	Threatened List (June 2022)
River Hook-sedge	<i>Carex nemoralis</i>	Rare	Endangered
Trailing Guinea-flower	<i>Hibbertia dentata</i>	Rare	Endangered
White Supplejack	<i>Ripogonum album</i>	Rare	Endangered
Oval Fork-fern	<i>Tmesipteris ovata</i>	Rare	Endangered



Figure 12:
MTB050FA_White Sup-
plejack regrowing in area
burnt in 2019-20 fire

3.5 RFSOS site map showing weed, deer, rare plant locations

Mt Billy, McKenzie River (EG64) Regional Rainforest Site of Significance



4 Pheasant Creek (RFSOS Site: EG65) Condition Assessment Statement

4.1 Rainforest Site of Significance summary (Pheasant Creek)

4.1.1 RFSOS site overview (rainforest, fire impacts and disturbances summary)

The 282 hectare Pheasant Creek “Regional” RFSOS contains 25 hectares of mapped rainforest, all of which is mapped as Warm Temperate Rainforest (RAINFOR spatial dataset).

The 2019-2020 summer fires affected 86% (242 ha) of the RFSOS and 68% (17 ha) of the rainforest within the RFSOS. 45% (11 ha) of the rainforest was impacted by higher severity fire (medium and high canopy scorch and canopy burnt), 23% (6 ha) by lower severity fire (low canopy scorch but understorey burnt) and 32% (8 ha) remaining unburnt (RAINFOR & FIRE_SEV spatial datasets).

Previously recorded disturbances at the site include 1939 and 1959 bushfires covering most of the RFSOS and high intensity logging in the north western and eastern boundary sections from 1988 to 2016 (FIRE_HISTORY and LOGSEASON spatial datasets).

In areas without recorded logging history, evidence of older prior logging and/or tracks were noted within and around the rainforest stand for the majority of the extent of the sites’ P1 area along the Pheasant Creek tributary.

4.1.2 Roads/tracks surveyed

The following roads and tracks within or adjacent the Pheasant Creek RFSOS were surveyed as part of the vehicle based assessment:

Road name	Survey status/note
Bendoc Ridge road	Surveyed
Pugaree road	Surveyed
Unmapped logging track adjacent north east of site	Surveyed

4.1.3 P1 areas surveyed summary

The Pheasant Creek RFSOS has one “Priority 1” (P1) area (mapped in the RFSOS100 spatial dataset) that was surveyed as part of the walking-based assessment. This P1 area is 63 hectares in total and contains 18 hectares of mapped rainforest (RAINFOR) along a major tributary of Pheasant Creek.

4.1.4 Notes and photos of rainforest and general site condition

The most significant impacts to rainforest from the 2019-2020 fires within the Pheasant Creek RFSOS occurred in the north western section of the site where high to moderate severity fire burnt through much of the largest section of rainforest mapped within the RFSOS. These impacts, while varying in intensity even within this zone, included significant damage to rainforest canopy species and the burning of at least one endangered Slender Tree-fern. The fire impacts in this area were however patchy, and while some rainforest canopies were killed some small sections remained intact with only understorey fire impacts, and some small rainforest patches remained completely unburnt. Within some of these surviving unburnt rainforest patches additional unburnt Slender Tree-ferns were recorded.



Figure 13: PHE093PA_High to moderate severity fire in Sclerophyll forest adjacent rainforest in north of RFSOS



Figure 14: PHE093PA_High to moderate severity fire in Sclerophyll forest adjacent rainforest in north of RFSOS



Figure 15: PHE103PA_High severity fire impacts adjacent rainforest with Slender Tree-fern

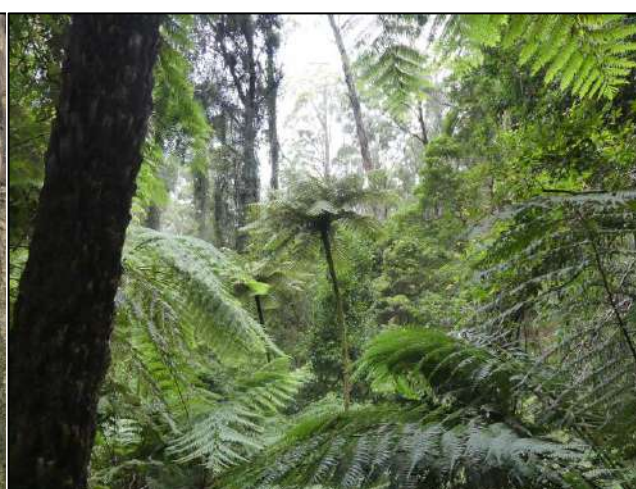


Figure 16: PHE126PA_Low to Moderate severity fire to edge of rainforest with Slender Skirted Tree-ferns



Figure 17: PHE109PA_Rainforest species regeneration



Figure 18: PHE109PA_Rainforest and eucalypt regeneration



Figure 19: PHE099PA_Eucalypt regeneration in rainforest area

In the central and southern sections of the RFSOS understorey fire and only patchier moderate to high severity fire impacted the eucalypt forest within the RFSOS catchment. The southern section

of the site in the narrower more linear mapped rainforest, containing less mature rainforest canopies than the north of the site, was more impacted by edge effects from understorey fire in the surrounding eucalypt forest.



Figure 20: PPHE132PA_Low severity fire in sclerophyll to rainforest edge



Figure 21&23: (Above L: PHE161PA: Windthrow gap into rainforest/ R: Waterfall in unburnt rainforest adjacent low severity eucalypt forest burn

4.2 Deer (Pheasant Creek)

4.2.1 Notes and photos on the presence and abundance of deer sign

Deer sign, including tracks, scat, rubbing and wallows were recorded at just 2 locations throughout the Pheasant Creek RFSOS (see also Appendices A–E and the map below). This included an observation of deer rubbing on a Gippsland Waratah and deer tracks along the unmarked logging access track in the north east of the site.



Figure 22 PHE140DB_Rub_on Gippsland Waratah

4.3 Rare or threatened flora and other significant findings (Pheasant Creek)

4.3.1 Notes and photos of rare or threatened flora and other significant findings

Throughout the Pheasant Creek RFSOS assessment the following six “Victorian Rare or Threatened” (VROT) flora species were recorded (see also Appendices A–E and the map below):

Common Name	Scientific Name	Victorian Advisory List (2014)	Threatened List (June 2022)
River Hook-sedge	<i>Carex nemoralis</i>	Rare	Endangered
Slender Tree-fern	<i>Cyathea cunninghamii</i>	Vulnerable	*not included in list
Slender/Skirted Tree-fern	<i>Cyathea cunninghamii</i> and/or <i>×marcescens</i>	Vulnerable	Endangered/*not included in list
Trailing Guinea-flower	<i>Hibbertia dentata</i>	Rare	Endangered
Oval Fork-fern	<i>Tmesipteris ovata</i>	Rare	Endangered
Small Forkfern	<i>Tmesipteris parva</i>	Rare	Endangered

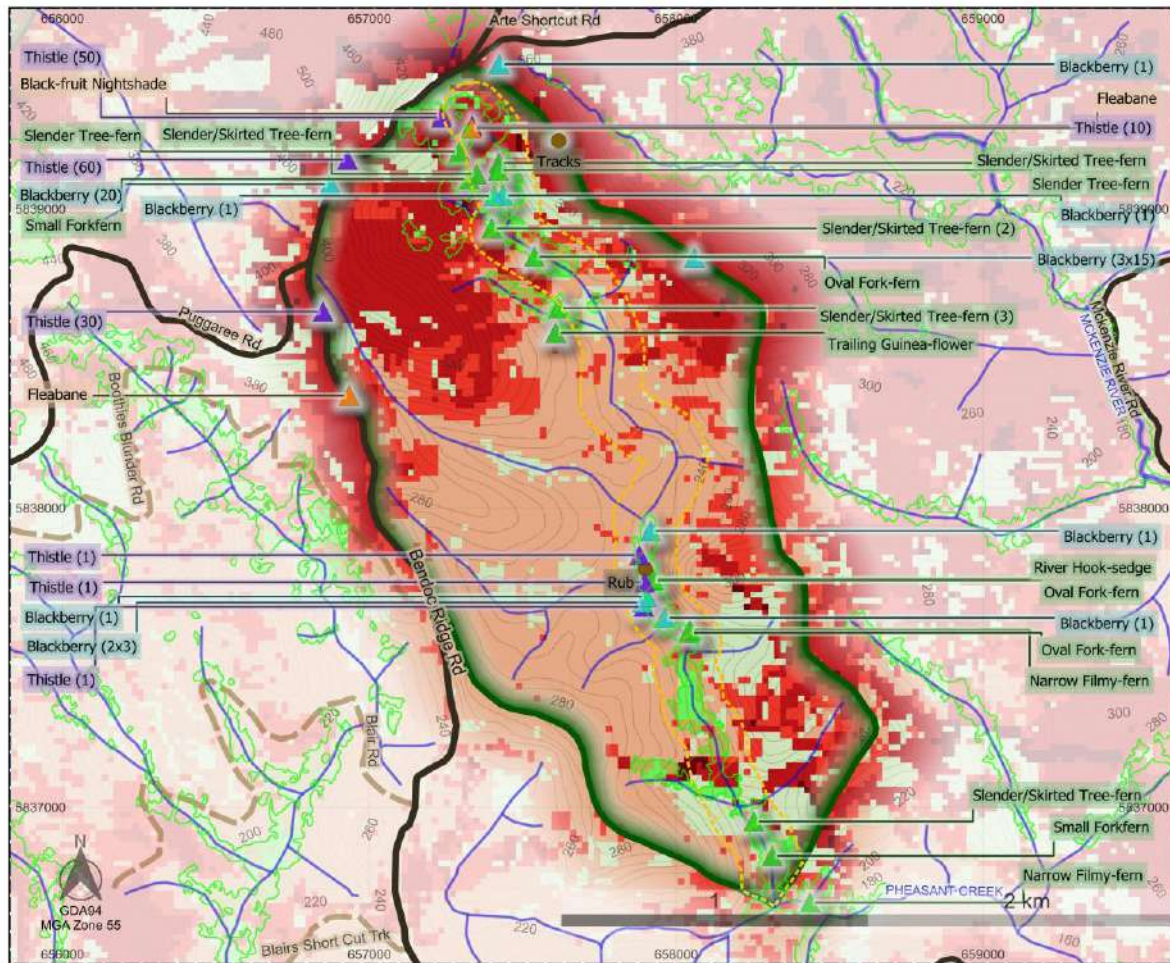
In addition to the six listed species above, surveyors encountered and recorded Narrow Filmy-fern (*Hymenophyllum rarum*) at two locations in the southern rainforest sections. The species is rarely encountered in central East Gippsland despite not being formally listed.



Above (L.R) , Figure 25: PHE138FA_River Hook-sedge, Slender/Skirted Tree-fern and Figure 26: PHE154FA_Narrow Filmy-fern

4.4 RFSOS site map showing weed, deer, rare plant locations

Pheasant Creek (EG65) Regional Rainforest Site of Significance



5 Murrindal (RFSOS Site: EG29) Condition Assessment Statement

5.1 Rainforest Site of Significance summary (Murrindal)

5.1.1 RFSOS site overview (rainforest, fire impacts and disturbances summary)

The 227 hectare Murrindal “Regional” RFSOS contains 25 hectares of mapped rainforest, almost all of which is mapped as Warm Temperate Rainforest (RAINFOR spatial dataset) except for a very small overlap with a small patch (0.2 ha/<1%) of mapped Dry Rainforest.

The 2019-2020 summer fires affected 79% (180 ha) of the RFSOS and 68% (13 ha) of the rainforest within the RFSOS. 43% (8 ha) of the rainforest was impacted by higher severity fire (medium and high canopy scorch and canopy burnt), 26% (5 ha) by lower severity fire (low canopy scorch but understorey burnt) and 32% (6 ha) remaining unburnt (RAINFOR & FIRE_SEV spatial datasets).

Previously recorded disturbances at the site include bushfires covering large parts of the site in each of 1965, 1966, 1967 and 1968, partial fuel reduction burning in 1972, partial bushfires in 1980 and 1982 and extensively in 1983, and additional fuel reduction burning in 1987, 1993, 1997, 2004 and 2007 covering most of the site in each of those years. Logging is recorded in the eastern higher elevation sections of the site from 1961 to 1985 (FIRE_HISTORY and LOGSEASON spatial datasets).

5.1.2 Roads/tracks surveyed

The following roads and tracks within or adjacent the Murrindal RFSOS were surveyed as part of the vehicle based assessment:

Road name	Survey status/note
Tulloch Ard road	Surveyed

5.1.3 P1 areas surveyed summary

The whole of the Murrindal RFSOS is a “Priority 1” (**P1**) area (mapped in the RFSOS100 spatial dataset) and this area was surveyed as part of the walking based assessment. This P1 area covers a predominantly western facing gully system around a tributary of the Murrindal River, approximately 1km down stream of the junction with Butchers Creek.

5.1.4 Notes and photos of rainforest and general site condition

The 2019-2020 fire impacts to the Murrindal RFSOS varied between lower severity fire in the western lower elevation areas and higher severity fire in the eastern higher elevation areas.

In the west of the site understorey fire burnt to the edge of the rainforest canopy along most of the extent of the linear rainforest stand with damage to the rainforest canopy species itself limited to intermittent sections where patches of moderate to high severity crown burning fire was present in the adjacent eucalypt forest.



Figure 27: MUD191PA_Moderate severity burn to edge of large mature rainforest section



Figure 28: MUD191PA_Moderate severity burn to edge of large mature rainforest section



Figure 29: MUD194PA_Large mature rainforest area with fire to edge



Figure 30: MUD194PA_Large mature rainforest area with fire to edge

In the central section of the RFSOS however, more severe fire impacts in adjacent eucalypt forest led to at least two instances where the combination of fire and subsequent windthrow/fall of large burnt eucalypts lead to either the creation or exacerbation of gaps in the narrow linear rainforest canopy.

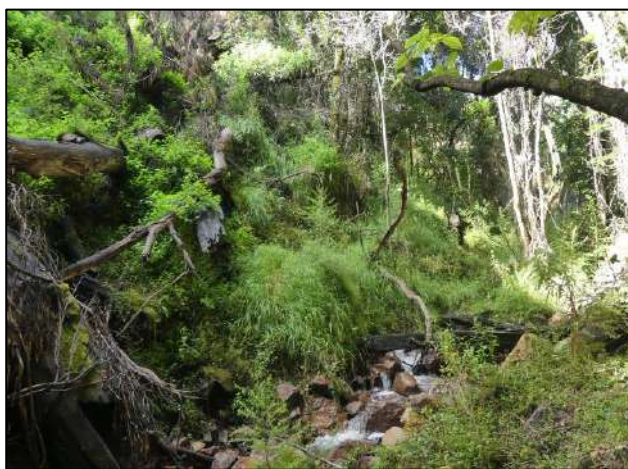


Figure 31: MUD204PA_Increased fire impacts to narrow sections of rainforest

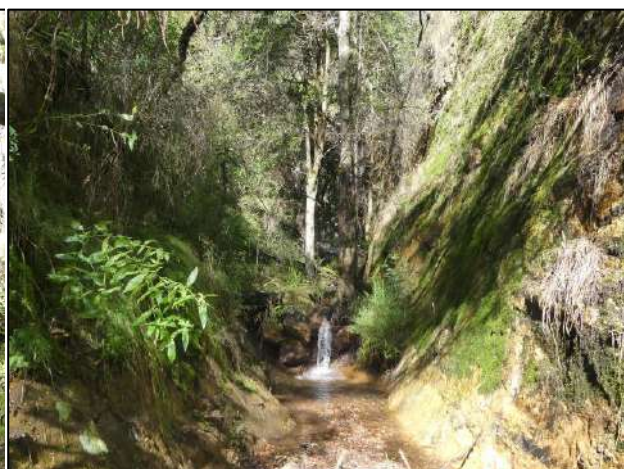


Figure 32: MUD217PA_Protected rainforest patch in small highly dissected gorge

The majority of the western third of the RFSOS was subject to very high severity crown scorching fire in both eucalypt and rainforest sections. In the north west a large ~5 hectare patch of rainforest was burnt entirely by high severity fire. This area appeared pre-fire to be characterised by younger more scattered rainforest canopy species in rainforest configurations indicating, as the sites spatial data does also, that the area had previously been impacted by intensive disturbances such as from fire and logging. Rainforest regeneration in this area included both rainforest canopy species such as Lilly Pilly resprouting basally as well as the presence of numerous eucalypt saplings. Lower strata regeneration in this area included rough Tree-ferns and a high proportion of disturbance related species such as Blanket Leaf, Hazel Pomaderris, Victorian Christmas Bush, and Common Ground-fern with Thistles scattered throughout the area.



Figure 33: MUD291PA_High severity fire in upper reaches of RFSOS catchment



Figure 34: MUD291PA_High severity fire in upper reaches of RFSOS catchment



Figure 35: MUD296PA_High severity fire impacts to rainforest in north east of RFSOS



Figure 36: MUD296PA_High severity fire impacts to rainforest in north east of RFSOS

At the edge of this area however, one small patch of very large mature rainforest canopy species survived unburnt where the gully system becomes more incised.

Another small isolated patch of unburnt rainforest was found in the south west of the site at a transition between high and low severity fire in the eucalypt forest. This stand, after suffering edge effects including canopy disturbance, is now more isolated from nearby rainforest patches.



5.2 Weeds (Murrindal)

5.2.1 Notes and photos on the presence and abundance of target weeds

Blackberry, Thistle, Fleabane and Black-fruit Nightshades were encountered in the Murrindal RFSOS (see also Appendices A–E and the map below) as well as one Cotoneaster plant found near to Gelantipy road just outside the western point of the RFSOS.

Isolated Blackberries were found as scattered individuals and in a few small clumps in the west of the site and at one central location on an exposed rock face near a small waterfall in a deeply incised gully.

Thistles and Fleabane were also found as scattered individuals throughout the site and were most prolific in the high severity burnt rainforest sections in the north east, and occasional Black-fruit Nightshades were encountered mostly in fire disturbed rainforest areas.



Figure 37: MUD182WA *Cotoneaster*

5.3 Deer (Murrindal)

5.3.1 Notes and photos on the presence and abundance of deer sign

Deer sign, including tracks, scat and rubbing were recorded at 15 locations throughout the Murrindal RFSOS (see also Appendices A–E and the map below). Most significantly this included observations of deer rubbing on rainforest canopy species, including deer rubs on Lilly Pilly, Muttonwood, Djelwuck and the endangered Pinkwood.



Figure 38: MUD307DB_Rub_on Lilly Pilly



Figure 39: MUD233DA_Rub_on Mutton-wood

5.4 Rare or threatened flora and other significant findings (Murrindal)

5.4.1 Notes and photos of rare or threatened flora and other significant findings

Throughout the Murrindal RFSOS assessment the following two “Victorian Rare or Threatened” (VROT) flora species were recorded (see also Appendices A–E and the map below):

Common Name	Scientific Name	Victorian Advisory List (2014)	Threatened List (June 2022)
Pinkwood	<i>Beyeria lanceolata</i>	Rare	Endangered
Streaked Rock-orchid	<i>Dendrobium striolatum</i>	Rare	Endangered



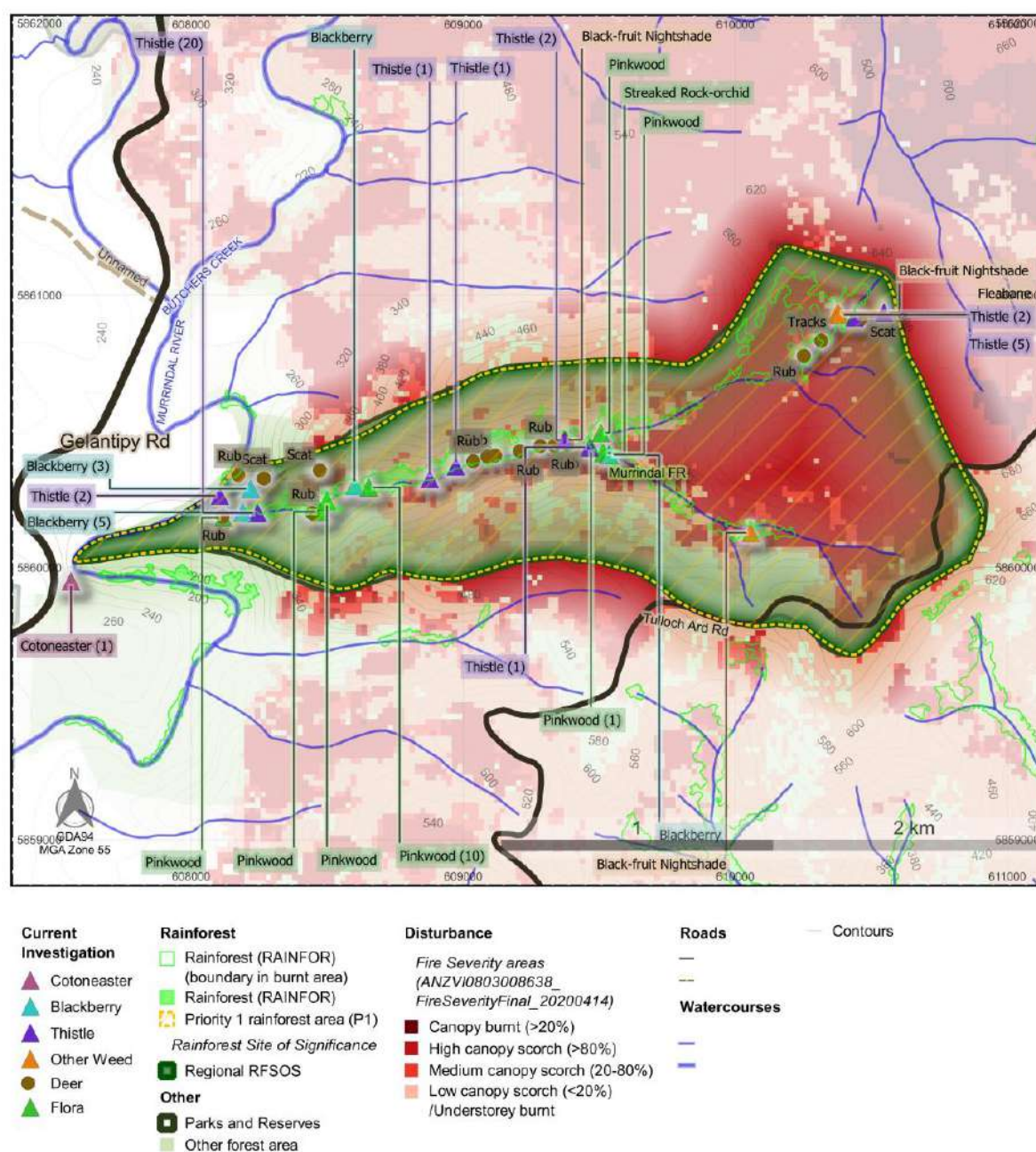
Figure 40: MUD214FB_Streaked Rock-orchid



Figure 41: MUD230FA_Pinkwood

5.5 RFSOS site map showing weed, deer, rare plant locations

Murrindal (EG29) Regional Rainforest Site of Significance



6 Mt Statham (RFSOS Site: EG30) Condition Assessment Statement

6.1 Rainforest Site of Significance summary (Mt Statham)

6.1.1 RFSOS site overview (rainforest, fire impacts and disturbances summary)

The 95 hectare Mt Statham “Regional” RFSOS contains 9 hectares of mapped rainforest, all of which is mapped as Cool Temperate Rainforest (RAINFOR spatial dataset).

The 2019-2020 summer fires affected 67% (63 ha) of the RFSOS and 46% (4 ha) of the rainforest within the RFSOS. 8% (1 ha) of the rainforest was impacted by higher severity fire (medium and high canopy scorch and canopy burnt), 38% (3 ha) by lower severity fire (low canopy scorch but understorey burnt) and 54% (5 ha) remaining unburnt (RAINFOR & FIRE_SEV spatial datasets).

Previously recorded disturbances at the site include bushfires covering the entirety of the site in each of 1965 and 2003. Logging is recorded in the north western higher elevation and southern sections of the site from 1969 to 1978 (FIRE_HISTORY and LOGSEASON spatial datasets).

6.1.2 Roads/tracks surveyed

The following roads and tracks within or adjacent the Mt Statham RFSOS were surveyed as part of the vehicle based assessment:

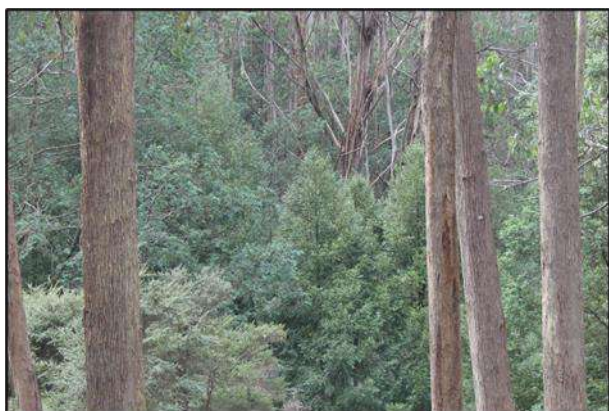
Road name	Survey status/note
Midnight track	Surveyed

6.1.3 P1 areas surveyed summary

The whole Mt Statham RFSOS is a “Priority 1” (P1) area (mapped in the RFSOS100 spatial dataset) and this area was surveyed as part of the walking based assessment. This P1 area surrounds a predominantly south-eastern facing tributary called Jungle Creek.

6.1.4 Notes and photos of rainforest and general site condition

Whilst an approximately 20 hectare patch of the eucalypt forest in the south of the Mt Statham RFSOS was subject to high severity crown burning fire the remainder of the catchment was mostly subject to only understorey burn or no burn at all, though some additional scattered smaller patches were also burnt by high severity fire. Figure 42:



MTS238PA_ (left) Unburnt rainforest upslope from mapped rainforest area

Figure 43: (right) MTS277PA_ High severity fire in southern section of RFSOS

Where rainforest within the site was adjacent to understorey fire in the eucalypt forest impacts to the rainforest, particularly in the north of the site, were minimal.



Figure 44: MTS243PA_Unburnt mature rainforest patch



Figure 45: MTS243PA_Unburnt mature rainforest patch



Figure 46: MTS253PA_Large unburnt Sassafrass

However, the scattered smaller patches of high severity fire mentioned above were concentrated in the central eastern sections of the RFSOS adjacent to some of the most mature rainforest with very large canopy trees such as Southern Sassafrass and Black Oliveberry, some of whose canopies were burnt, with many trees killed and some now growing only from epicormic or basal resprouting.



Figure 47: MTS247PA_Understorey fire in to rainforest edge



Figure 48: MTS249PA_Fire damaged Sassafrass at rainforest margin



Figure 49: MTS261PA_Rainforest canopy species burnt at rainforest edge



Figure 52: MTS268PA_Canopy burn includes large rainforest species

6.2 Weeds (Mt Statham)

6.2.1 Notes and photos on the presence and abundance of target weeds

Blackberry and Thistle were recorded in the Mt Statham RFSOS (see also Appendices A–E and the map below).

Isolated Blackberries were found at two locations within the rainforest and the most significant patches were found along the roadside of Midnight Track.

Thistles were also found as scattered individuals throughout the site especially where fire had burnt in to the rainforest margin. Thistles were most prolific along Midnight Track in the west of the site.



6.3 Deer (Mt Statham)

6.3.1 Notes and photos on the presence and abundance of deer sign

Deer rubbing was recorded at 2 locations within the Mt Statham RFSOS (see also Appendices A–E and the map below). Most significantly this included observations of deer rubbing on the rainforest canopy species Southern Sassafras.



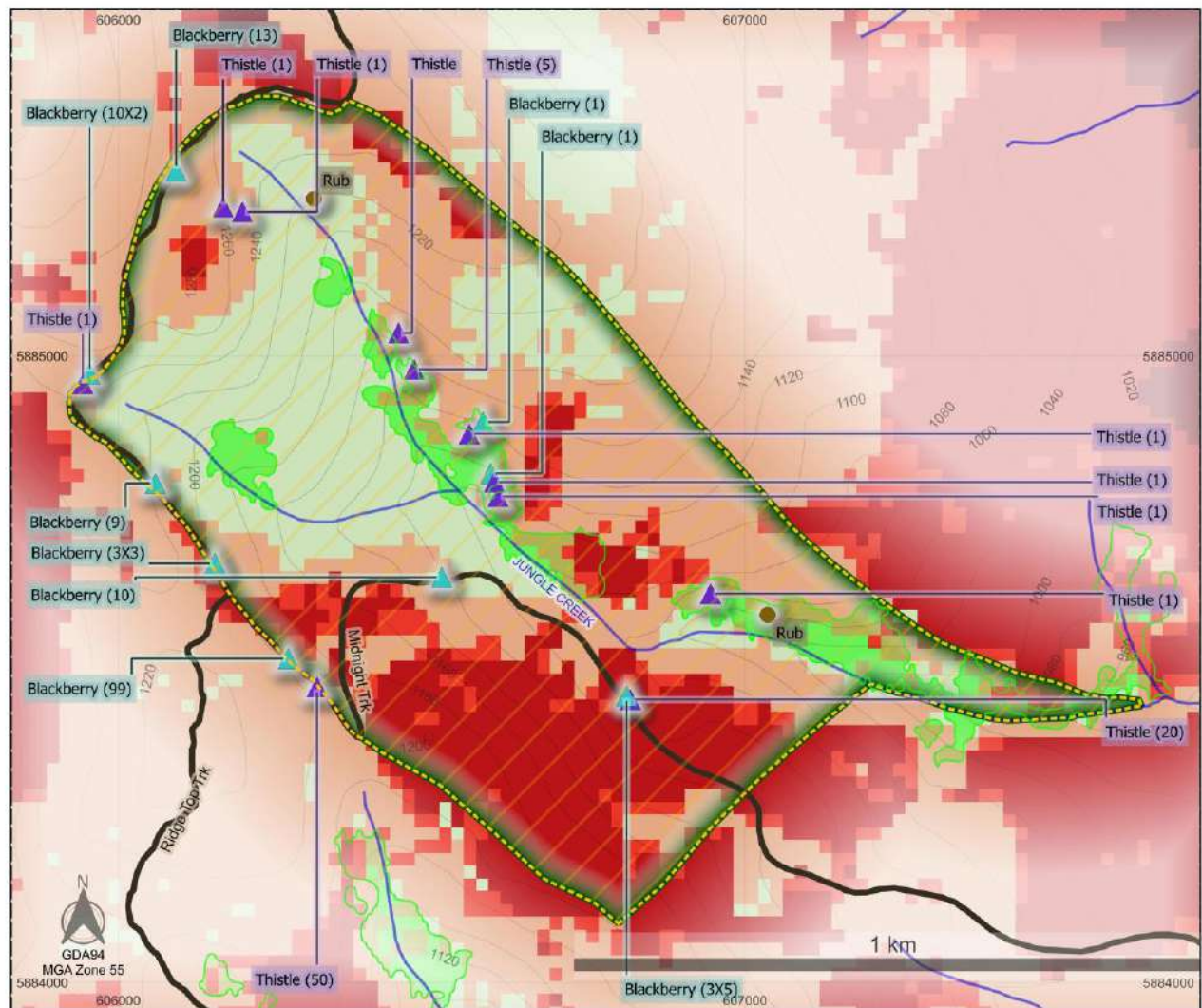
6.4 Rare or threatened flora and other significant findings (Mt Statham)

6.4.1 Notes and photos of rare or threatened flora and other significant findings

No “Victorian Rare or Threatened” (VROT) flora species were recorded during the Mt Statham RFSOS assessment.

6.5 RFSOS site map showing weed, deer, rare plant locations

Mt Statham (EG30) Regional Rainforest Site of Significance



7 Riddle Creek (RFSOS Site: EG56) Condition Assessment Statement

7.1 Rainforest Site of Significance summary (Riddle Creek)

7.1.1 RFSOS site overview (rainforest, fire impacts and disturbances summary)

The 176 hectare Riddle Creek “Regional” RFSOS contains 12 hectares of mapped rainforest, all of which is mapped as Warm Temperate Rainforest (RAINFOR spatial dataset).

The 2019-2020 summer fires affected 94% (165 ha) of the RFSOS and 84% (10 ha) of the rainforest within the RFSOS. 53% (6 ha) of the rainforest was impacted by higher severity fire (medium and high canopy scorch and canopy burnt), 32% (4 ha) by lower severity fire (low canopy scorch but understorey burnt) and 16% (2 ha) remaining unburnt (RAINFOR & FIRE_SEV spatial datasets).

Previously recorded disturbances at the site include a 2009 fuel reduction burn covering the entirety of the site and a bushfire covering the entirety of the site in 2014. No logging is recorded in the site (FIRE_HISTORY and LOGSEASON spatial datasets).

7.1.2 Roads/tracks surveyed

The following roads and tracks within or adjacent the Riddle Creek RFSOS were surveyed as part of the vehicle based assessment:

Road name	Survey status/note
Paradise Ridge Road	Surveyed

7.1.3 P1 areas surveyed summary

The entire Riddle Creek RFSOS is a “Priority 1” (P1) area (mapped in the RFSOS100 spatial dataset) that was surveyed as part of the walking based assessment. This P1 area is a predominantly south facing gully system around a tributary of Riddle Creek.

7.1.4 Notes and photos of rainforest and general site condition

Almost the entirety of the Riddle Creek RFSOS was burnt by high severity fire. This included large sections of the eucalypt forest slopes burnt by the highest fire severity burn, category 6; “Canopy burnt (>20%)”. Throughout large sections of the site, where often fire moderates closer to lower elevation/more incised gullies, fire modelling showed that this moderation descended only to the level of “High canopy scorch (>80%)” and infield this meant eucalypt canopies were largely killed and only resprouting epicormically all the way to the rainforest margin.

In the context of these highest severity fire impacts to the site, large stretches of the linear rainforest mapped at the site were found with only epicormically resprouting shoots to rainforest canopy species such as Lilly Pilly. While lower strata differential rainforest species were found throughout even these intensely burnt areas, high proportions of disturbance related species such as Blanket Leaf, Hazel Pomaderris, Musk Daisy-bush and Cassinia spp. were found within the rainforest areas. However, a few small patches of unburnt rainforest were found along the main tributary running through the site.



Figure 56: RID329PA_Large areas of high severity burnt sclerophyll forest





Figure 59: RID337PA_High severity fire to rainforest edge



Figure 60: RID337PA_High severity fire to rainforest edge



Figure 61: RID342PA_Very large Jungle Grape burnt at base from understorey fire at rainforest margin



Figure 62: RID346PB_Unburnt rainforest patch amongst high severity burnt sclerophyll forest

Also noted were parts of the site in the southern sections which were subject to the highest severity fire in both the recent large 2014 bushfires and the most recent 2019-2020 fires.



Figure 63: RID352PA_Burnt area appearing to have been burnt in large 2014 fires also



Figure 64: RID352PA_Burnt area appearing to have been burnt in large 2014 fires also



Figure 65: RID352PA_Burnt area appearing to have been burnt in large 2014 fires also

7.2 Weeds (Riddle Creek)

7.2.1 Notes and photos on the presence and abundance of target weeds

Blackberry, Thistle, Fleabane and Black-fruit Nightshades were encountered in the Riddle Creek, McKenzie River RFSOS (see also Appendices A–E and the map below).

Blackberries were found scattered along the roadside of Paradise Ridge Road along the northern edge of the RFSOS. Thistles were found as scattered individuals and in clumps throughout the site and were most prolific in the high severity burnt rainforest sections of the site. Black-fruit Nightshades were encountered in some moderately burnt rainforest areas. Extensive patches of Fleabane were found along Paradise Ridge Road particularly in post fire bulldozer push-ins.



7.3 Deer (Riddle Creek)

7.3.1 Notes and photos on the presence and abundance of deer sign

An extensive amount of deer sign, including tracks, scat, rubbing and browsing were recorded at 16 locations throughout the Riddle Creek RFSOS (see also Appendices A–E and the map below). Most significantly these included observations of deer rubbing and browsing on rainforest canopy species, including at least 9 sites of deer rubbing on Lilly Pilly and browsing on Muttonwood.



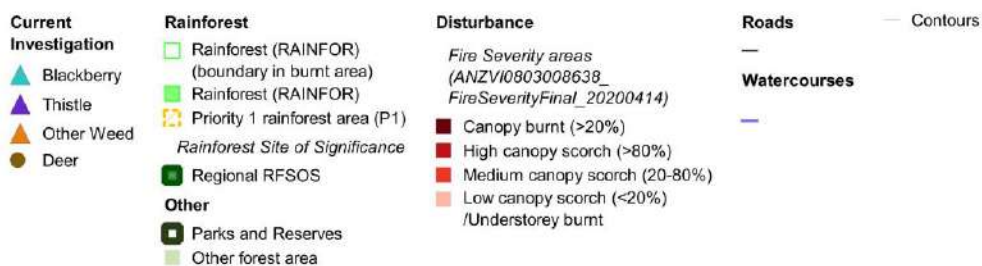
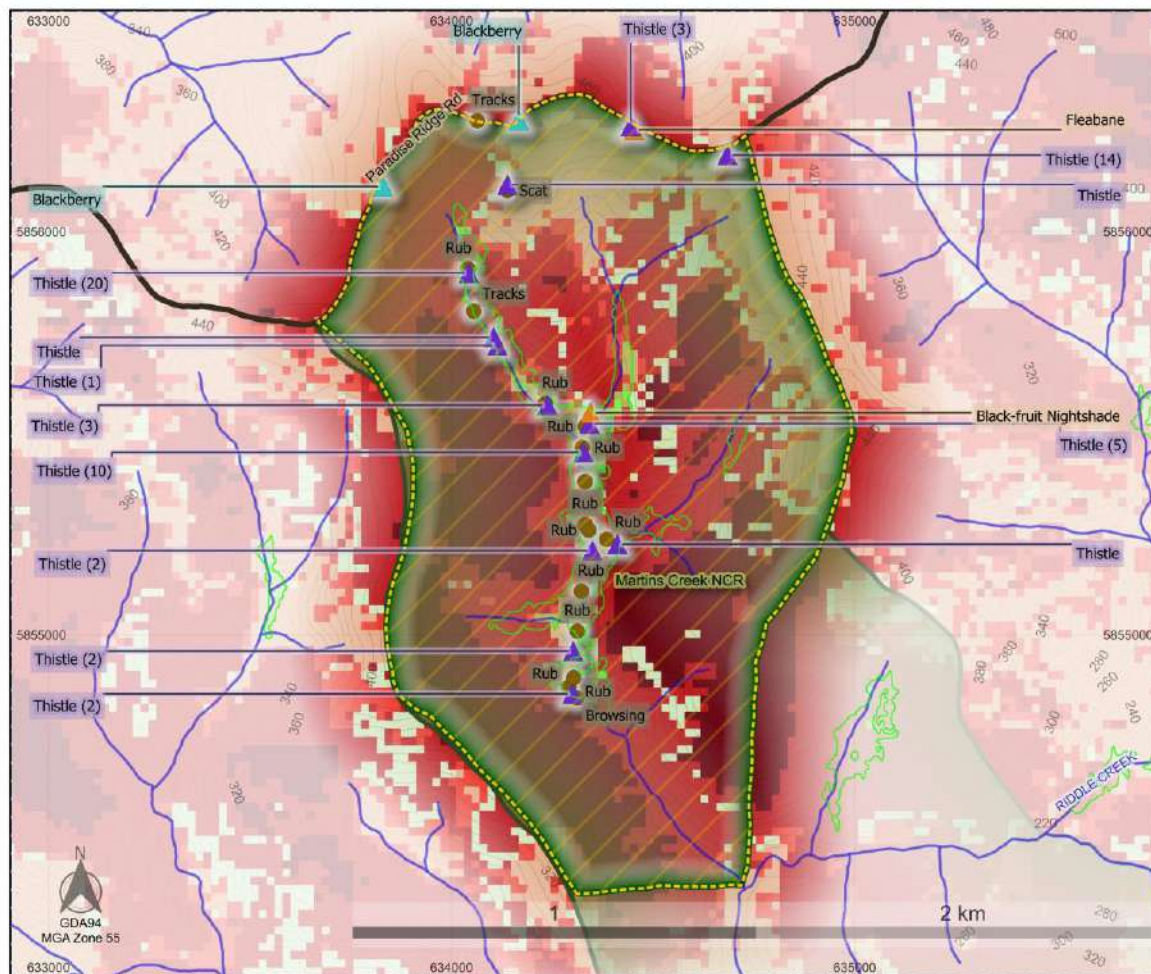
7.4 Rare or threatened flora and other significant findings (Riddle Creek)

7.4.1 Notes and photos of rare or threatened flora and other significant findings

No “Victorian Rare or Threatened” (VROT) flora species were recorded during the Riddle Creek RFSOS assessment.

7.5 RFSOS site map showing weed, deer, rare plant locations

Riddle Creek (EG56) Regional Rainforest Site of Significance



8 East Thurra (RFSOS Site: EG105) Condition Assessment Statement

8.1 Rainforest Site of Significance summary (East Thurra)

8.1.1 RFSOS site overview (rainforest, fire impacts and disturbances summary)

The 248 hectare East Thurra “State” RFSOS contains 15 hectares of mapped rainforest, all of which is mapped as Warm Temperate Rainforest (RAINFOR spatial dataset).

The 2019-2020 summer fires affected 86% (212 ha) of the RFSOS and 42% (6 ha) of the rainforest within the RFSOS. 3% (1 ha) of the rainforest was impacted by higher severity fire (medium and high canopy scorch and canopy burnt), 39% (6 ha) by lower severity fire (low canopy scorch but understorey burnt) and 58% (9 ha) remaining unburnt (RAINFOR & FIRE_SEV spatial datasets).

Previously recorded disturbances at the site include a bushfire in 1968 in the southern half of the site, a bushfire in the north eastern section of the site in 1981 and a bushfire covering the whole site in 1983. No logging is recorded in the site (FIRE_HISTORY and LOGSEASON spatial datasets).

8.1.2 Roads/tracks surveyed

The following roads and tracks within or adjacent the East Thurra RFSOS were surveyed as part of the vehicle based assessment:

Road name	Survey status/note
Thurra River road	Surveyed
Two Crossing/Two Crossings tracks	Not surveyed (overgrown/unpassable)
Upper Thurra track	Not surveyed (overgrown/unpassable)
Bootlace track	Not surveyed (overgrown/unpassable)

8.1.3 P1 areas surveyed summary

The entire East Thurra RFSOS is a “Priority 1” (**P1**) area (mapped in the RFSOS100 spatial dataset) that was surveyed as part of the walking based assessment. The rainforest within the P1 area is mostly located along the main Thurra River East Branch with a small extension of rainforest in a western facing tributary.

8.1.4 Notes and photos of rainforest and general site condition

The majority of the East Thurra RFSOS was subject to only understorey fire with and some small isolated patches with moderate to high fire severity. However, large stretches of the rainforest within the site, particularly in the north and parts of the western facing extension, are narrow linear stands. Surrounding understorey fire appeared to significantly set back rainforest recovery gains that were made since the previous bushfire disturbances in 1983.



Figure 70: EAS372PA_Understorey fire in RFSOS catchment to rainforest edge



Figure 71: EAS376PA_Understorey fire in RFSOS catchment to rainforest edge



Figure 72: EAS376PA_Understorey fire in RFSOS catchment to rainforest edge

Evidence of the fire events prior to 2019-2020 were found in multiple places throughout the site including where older fire scars were noted on both large living and large dead rainforest canopy trees in areas not burnt in the 2019-2020 fires. In addition, at the edge of a patch of rainforest with large mature rainforest canopy trees that was not burnt in 2019-2020, some large Lilly Pilly trees were observed with apparent epicormic resprouts that had survived since the last fire and regrown large enough to contribute to the current undisturbed rainforest canopy.

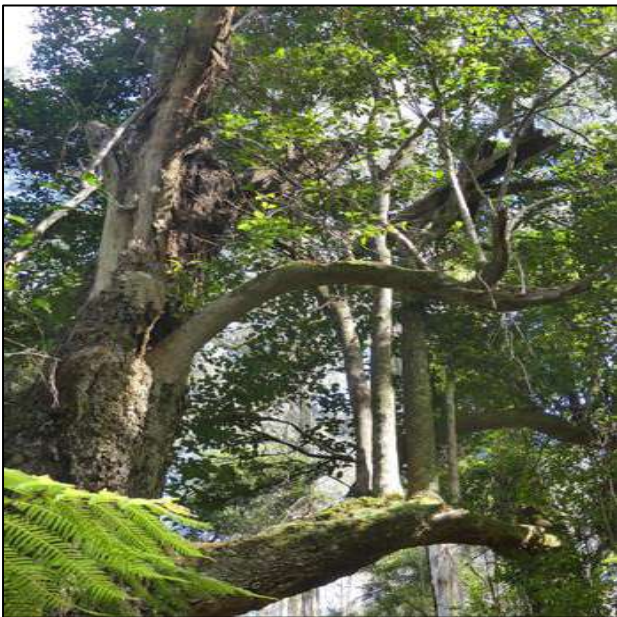


Figure 73: EAS386PA_Lilly Pilly resprouting suggesting historic fire recovery (left)



Figure 74: EAS386PA_Rainforest area not burnt in 2019-2020 fire (right)

In addition to the direct fire impacts to the rainforest stand caused by understory fire burning the ecotone and rainforest margin, numerous examples of eucalypt tree windthrow fall damage into the rainforest stand were recorded.



8.2 Weeds (East Thurra)

8.2.1 Notes and photos on the presence and abundance of target weeds

Blackberry and Thistle were recorded in the East Thurra RFSOS (see also Appendices A–E and the map below).

Blackberries were found both scattered along and in a few large patches along Thurra River Road as well as at the river crossing of Two Crossings Track and Thurra River East Branch close to Thurra River Road. Isolated thistles were also found near this location.



Figure 79: EAS405WA_Blackberry (5x10)_At Figure 80: EAS405WA_Blackberry (5x10)_At

8.3 Deer (East Thurra)

8.3.1 Notes and photos on the presence and abundance of deer sign

No deer sign was observed within the East Thurra RFSOS.

8.4 Rare or threatened flora and other significant findings (East Thurra)

8.4.1 Notes and photos of rare or threatened flora and other significant findings

Throughout the East Thurra RFSOS assessment the following two “Victorian Rare or Threatened” (VROT) flora species were recorded (see also Appendices A–E and the map below):

Common Name	Scientific Name	Victorian Advisory List (2014)	Threatened List (June 2022)
River Hook-sedge	<i>Carex nemoralis</i>	Rare	Endangered
Lacy Wedge-fern	<i>Lindsaea microphylla</i>	Rare	Endangered



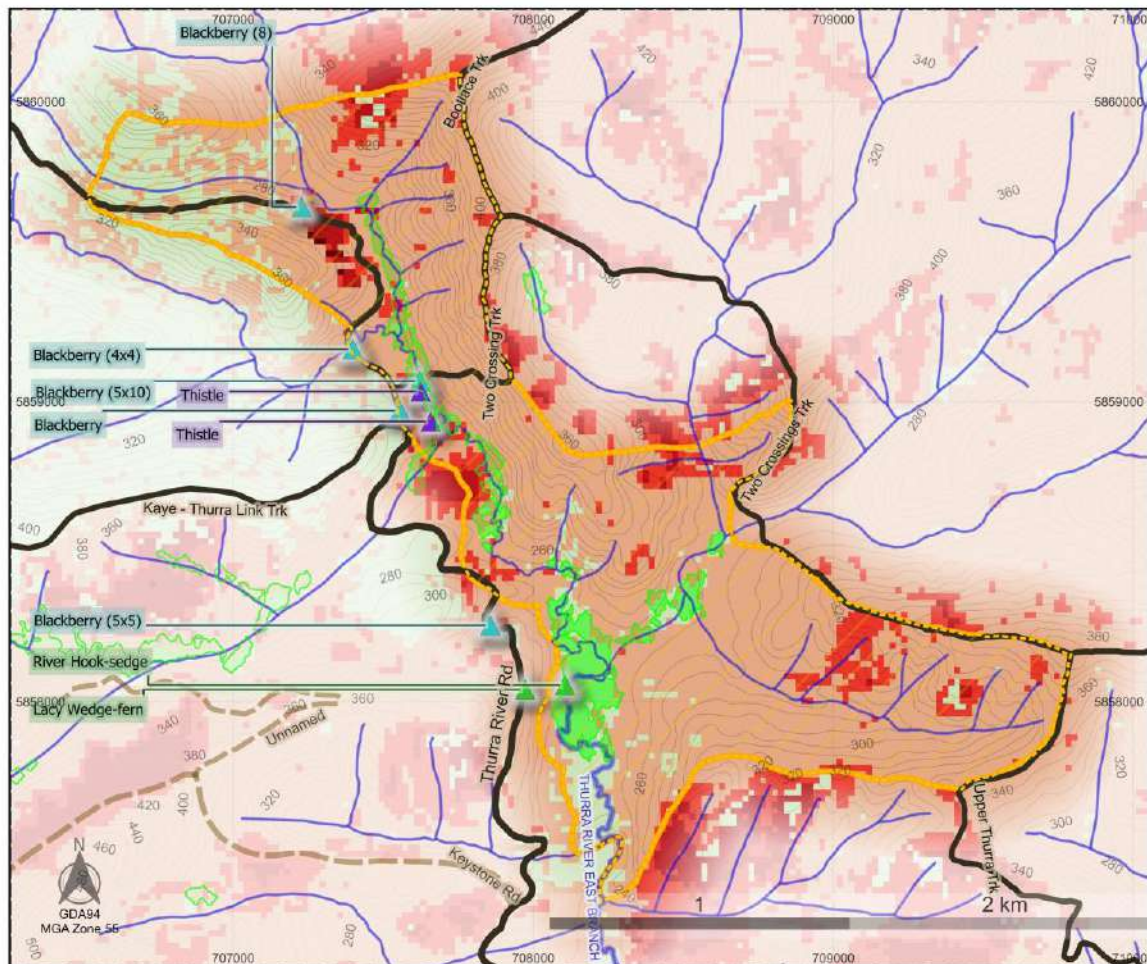
Figure 81: EAS396FA Lacy Wedge-fern



Figure 82: EAS396FA Lacy Wedge-fern

8.5 RFSOS site map showing weed, deer, rare plant locations

East Thurra (EG105) State Rainforest Site of Significance



9 Brown Creek (Thurra River Road) (RFSOS Site: EG102) Condition Assessment Statement

9.1 Rainforest Site of Significance summary (Brown Creek (Thurra River Road))

9.1.1 RFSOS site overview (rainforest, fire impacts and disturbances summary)

The 292 hectare Brown Creek (Thurra River Road) “Regional” RFSOS contains 15 hectares of mapped rainforest, all of which is mapped as Warm Temperate Rainforest (RAINFOR spatial dataset).

The 2019-2020 summer fires affected 78% (229 ha) of the RFSOS and 94% (14 ha) of the rainforest within the RFSOS. 93% (14 ha) of the rainforest was impacted by higher severity fire (medium and high canopy scorch and canopy burnt), 1% (0.1 ha) by lower severity fire (low canopy scorch but understorey burnt) and 6% (1 ha) remaining unburnt (RAINFOR & FIRE_SEV spatial datasets).

Previously recorded disturbances at the site include bushfires in 1968 and 1983 each covering the whole site, and smaller areas labeled as “FUEL REDUCTION” which appear to be post logging coupe burns in 1990 and 1995. Extensive high intensity logging is recorded over most of the site from 1965 to 2020 (FIRE_HISTORY and LOGSEASON spatial datasets).

During the site visit, it was observed that one logging coupe had recently been completed within the RFSOS and an additional logging coupe was about to start within the RFSOS. Both of these coupes are scheduled adjacent to and overlap rainforest stands within the RFSOS. Approximately 86% of the Brown Creek (Thurra River Road) RFSOS is scheduled for logging (Timber_Release_Plan).

9.1.2 Roads/tracks surveyed

The following roads and tracks within or adjacent the Brown Creek (Thurra River Road) RFSOS were surveyed as part of the vehicle based assessment:

Road name	Survey status/note
Thurra River road	Surveyed
Drummer track	Surveyed

9.1.3 P1 areas surveyed summary

The Brown Creek (Thurra River Road) RFSOS has one “Priority 1” (**P1**) area (mapped in the RFSOS100 spatial dataset) that was surveyed as part of the walking based assessment. This P1 area is 107 hectares in total and contains 15 hectares of mapped rainforest (RAINFOR). The P1 area rainforest within the site is concentrated along Browns Creek with some patches in small southerly facing tributaries.

9.1.4 Notes and photos of rainforest and general site condition

Almost the entire catchment area of the Brown Creek (Thurra River Road) RFSOS was subject to high severity fire and the majority of the largely young regrowth eucalypt forest throughout the site was in a state of epicormic regeneration. This included areas that had been intensively logged from the 1980s to the present.



Figure 83: BRT414AP_Intensive logging within RFSOS catchment post fire



Figure 84: BRT415PA_High severity fire in young sclerophyll forest adjacent RFSOS

The majority of the rainforest throughout the RFSOS was significantly impacted by the 2019-2020 with most areas burnt by high severity fire removing rainforest canopies or reducing them to epicormic reshoots and as a result most rainforest mid and understory species were also burnt. In the east of the site, in a smaller tributary feeding in to the main Browns Creek stream course, two dead critically endangered Prickly Tree-ferns were found burnt by the 2019-2020 fires.



Figure 85: BRT417PA_Severely burnt and resprouting rainforest species



Figure 86: BRT417PA_Severely burnt and resprouting rainforest species

Species regeneration within the most severely burnt areas included dense areas of disturbance mediated species such as Kangaroo Apples, Victorian Christmas Bush and Hazel Pomaderris. Within a severely burnt rainforest area in the east of the site the rare and endangered Creeping Shield-fern was also observed resprouting and forming a dense colony covering the ground in a recovering rainforest area.

Within both rainforest areas and some rainforest-eucalypt forest ecotones both rainforest canopy species such as Lilly Pilly as well as eucalypt saplings were found.



Figure 87: BRT420FB_Dead Prickly Tree-fern in severely burnt rainforest gully



Figure 88: BRT417PA_Severely burnt rainforest area with resprouting Creeping Shield-fern



Figure 89: BRT431PA_Severely burnt rainforest area with dense Kangaroo Apple



Figure 90: BRT431PA_Severely burnt rainforest area with rainforest species regeneration

Despite most of the rainforest at the site having been severely burnt, a few small areas of unburnt rainforest were found.



Figure 91: BRT436PA_Small unburnt rainforest canopy section



Figure 92: BRT443PA_Small unburnt rainforest canopy section



Figure 93: BRT436PA Small unburnt rainforest canopy section

9.2 Weeds (Brown Creek (Thurra River Road))

9.2.1 Notes and photos on the presence and abundance of target weeds

Blackberry, Thistle, Fleabane and Black-fruit Nightshades were encountered in the Brown Creek (Thurra River Road) RFSOS (see also Appendices A–E and the map below).

Isolated Blackberries were found at locations within the rainforest at sites of recent disturbance from the 2019-20 fire. Most significantly a large stretch of the Thurra River Road roadside either side of the crossing of Browns Creek (approximately 500m) has extensive blackberry patches.

Thistles and Fleabane were also found as scattered individuals throughout the site and were most prolific in the high severity burnt rainforest sections and Black-fruit Nightshades were encountered mostly in fire disturbed rainforest areas of the east.



Figure 94: BRT451WA_Blackberry_Extensive along road-side



Figure 95: BRT451WA_Blackberry_Extensive along road-side

9.3 Deer (Brown Creek (Thurra River Road))

9.3.1 Notes and photos on the presence and abundance of deer sign

Deer sign rubbing and browsing was recorded at 3 locations throughout the Brown Creek (Thurra River Road) RFSOS (see also Appendices A–E and the map below). Most significantly this included observations of deer rubbing on the rainforest canopy species Lilly Pilly and Large Mock-olive and browsing on Muttonwood.



Figure 96: BRT437DA_Browsing_on Mutton-wood



Figure 97: BRT444DB_Rub_on Lilly Pilly

9.4 Rare or threatened flora and other significant findings (Brown Creek (Thurra River Road))

9.4.1 Notes and photos of rare or threatened flora and other significant findings

Throughout the Brown Creek (Thurra River Road) RFSOS assessment the following four* “Victorian Rare or Threatened” (VROT) flora species were recorded (see also Appendices A–E and the map below):

Common Name	Scientific Name	Victorian Advisory List (2014)	Threatened List (June 2022)
Prickly Tree-fern*	<i>Cyathea leichhardtiana</i>	Vulnerable	Critically Endangered
Trailing Guinea-flower	<i>Hibbertia dentata</i>	Rare	Endangered
Creeping Shield-fern	<i>Lastreopsis microsora</i> subsp. <i>microsora</i>	Rare	Endangered
Small Forkfern	<i>Tmesipteris parva</i>	Rare	Endangered

*The two Prickly Tree-fern plants found were both dead, burnt by the 2019-2020 fire.



Figure 98: BRT420FB_Prickly Tree-fern (dead)



Figure 99: BRT420FB_Prickly Tree-fern (dead)_location



Figure 100: BRT420FB Prickly Tree-fern (dead)

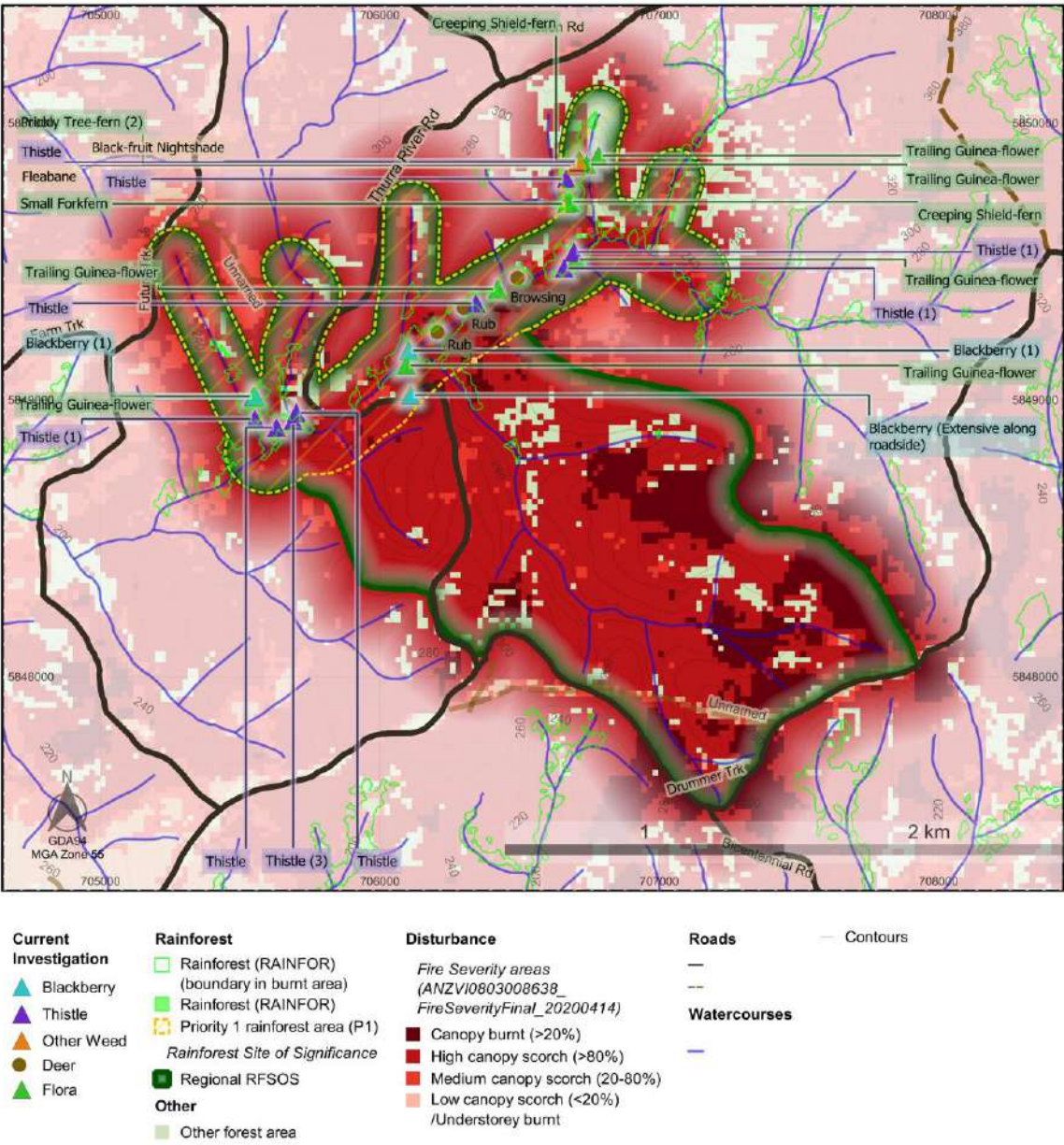


Figure 101: BRT429FA_Creeping Shield-fern

9.5 RFSOS site map showing weed, deer, rare plant locations

Double Creek South Branch - Miners Tk (RFSOS Site: EG112) Condition Assessment Statement

Brown Creek (Thurra River Road) (EG102) Regional Rainforest Site of Significance



9.6 Rainforest Site of Significance summary (Double Creek South Branch - Miners Tk)

9.6.1 RFSOS site overview (rainforest, fire impacts and disturbances summary)

The 112 hectare Double Creek South Branch - Miners Tk “State” RFSOS contains 16 hectares of mapped rainforest all of which is mapped as Warm Temperate Rainforest (RAINFOR spatial dataset).

The 2019-2020 summer fires affected 98% (109 ha) of the RFSOS and 91% (15 ha) of the rainforest within the RFSOS. 66% (11 ha) of the rainforest was impacted by higher severity fire (medium and high canopy scorch and canopy burnt), 26% (4 ha) by lower severity fire (low canopy scorch but understorey burnt) and 9% (1 ha) remaining unburnt (RAINFOR & FIRE_SEV spatial datasets).

Previously recorded disturbances at the site include a bushfire in 1983 covering the whole of the site and fuel reduction burning covering the whole site in 2007. No logging is recorded in the site (FIRE_HISTORY and LOGSEASON spatial datasets).

9.6.2 Roads/tracks surveyed

The following roads and tracks within or adjacent the Double Creek South Branch - Miners Tk RFSOS were surveyed as part of the vehicle based assessment:

Road name	Survey status/note
Miners track	Surveyed

9.6.3 P1 areas surveyed summary

The entire Double Creek South Branch - Miners Tk RFSOS is a “Priority 1” (P1) area (mapped in the RFSOS100 spatial dataset) that was surveyed as part of the walking based assessment. The P1 area surrounds a north easterly facing rainforest gully system long a tributary of the Double Creek.

9.6.4 Notes and photos of rainforest and general site condition

The Double Creek RFSOS was severely impacted by the 2019-2020 bushfire with almost all of the sclerophyll forest and large parts of the rainforest stand within the site subjected to higher severity fire (high canopy scorch).

However, within and adjacent to areas impacted by high severity fire areas of rainforest that experienced only understorey fire were observed as well as some small sections of rainforest that were not burnt at all in the 2019-2020 fire. In one of these areas a very large population of endangered Prickly Tree-ferns were found, with approximately 100 plants counted. At the edge of this large population however, some Prickly Tree-ferns were found burnt and dead as a result of the 2019-2020 fire.



Figure 102: DOU543PA_High severity fire in RFSOS catchment



Figure 103: DOU543PA_High severity fire in RFSOS catchment



Figure 104: DOU518PA_Severely burnt rainforest at downstream extent



Figure 105: DOU472PA_Severely burnt rainforest and ecotone



Figure 106: DOU538PA_Severely burnt rainforest at upstream extent

In the central section of the RFSOS a large landslip was observed stretching from the rainforest margin to the centre of the stream.



9.7 Weeds (Double Creek South Branch - Miners Tk)

9.7.1 Notes and photos on the presence and abundance of target weeds

Red-ink Weed, Thistle and Fleabane were encountered in the Double Creek South Branch - Miners Tk RFSOS (see also Appendices A–E and the map below).

Extensive areas of Thistle and Fleabane species were found in the severely burnt areas of sclerophyll forest areas and lower numbers of these species within the rainforest areas, generally increasing in abundance relative to fire severity. The most significant weed observed at the study location was the extensive presence of Red Ink-weed in patches of varying sizes within and adjacent high severity burnt areas along the entire length of the rainforest stand.



Figure 109: DOU465WA_Red-ink Weed



Figure 110: DOU465WA_Red-ink Weed



Figure 111: DOU516WA_Fleabane_Large patch amongst rainforest vegetation

9.8 Deer (Double Creek South Branch - Miners Tk)

9.8.1 Notes and photos on the presence and abundance of deer sign

Deer sign, including tracks, rubbing and browsing were recorded at 7 locations throughout the Double Creek South Branch - Miners Tk RFSOS (see also Appendices A–E and the map below).

Extensive deer tracking was observed running parallel to and on either side of the main watercourse and rainforest stands, particularly in the lower sections of the RFSOS. In addition, deer rubbing was seen on the rainforest canopy species Lilly Pilly and some browsing was observed on other rainforest species including Large Mock-olive and the Victorian rare and critically endangered Sandpaper Fig.



Figure 112: DOU483DB Deer _Rub on Lillypilly



Figure 113 (left): DOU480DB_Browsing_on Sandpaper
Fig Above: Figure 114: DOU511DA_Tracks through rain-forest vegetation

9.9 Rare or threatened flora and other significant findings (Double Creek South Branch - Miners Tk)

9.9.1 Notes and photos of rare or threatened flora and other significant findings

Throughout the Double Creek South Branch - Miners Tk RFSOS assessment the following ten “Victorian Rare or Threatened” (VROT) flora species were recorded (see also Appendices A–E and the map below):

Common Name	Scientific Name	Victorian Advisory List (2014)	Threatened List (June 2022)
Jungle Bristle-fern	<i>Abrodictyum caudatum</i>	Rare	Endangered
Rough-barked Apple	<i>Angophora floribunda</i>	Rare	Endangered
Prickly Tree-fern	<i>Cyathea leichhardtiana</i>	Vulnerable	Critically Endangered
Bolwarra	<i>Eupomatia laurina</i>	Rare	Endangered
Sandpaper Fig	<i>Ficus coronata</i>	Vulnerable	Critically Endangered
Trailing Guinea-flower	<i>Hibbertia dentata</i>	Rare	Endangered
Creeping Shield-fern	<i>Lastreopsis microsora</i> subsp. <i>microsora</i>	Rare	Endangered
White Supplejack	<i>Ripogonum album</i>	Rare	Endangered
Soft Skullcap	<i>Scutellaria mollis</i>	Rare	Endangered
Small Forkfern	<i>Tmesipteris parva</i>	Rare	Endangered



Figure 115: DOU466FB_Bolwarra



Figure 116: DOU468FB_White Supplejack



Figure 117: DOU477FB_Sandpaper Fig



Figure 118: DOU484FB_Soft Skullcap



Figure 119: DOU536FA_Prickly Tree-fern



Figure 120: DOU535FA_Prickly Tree-fern



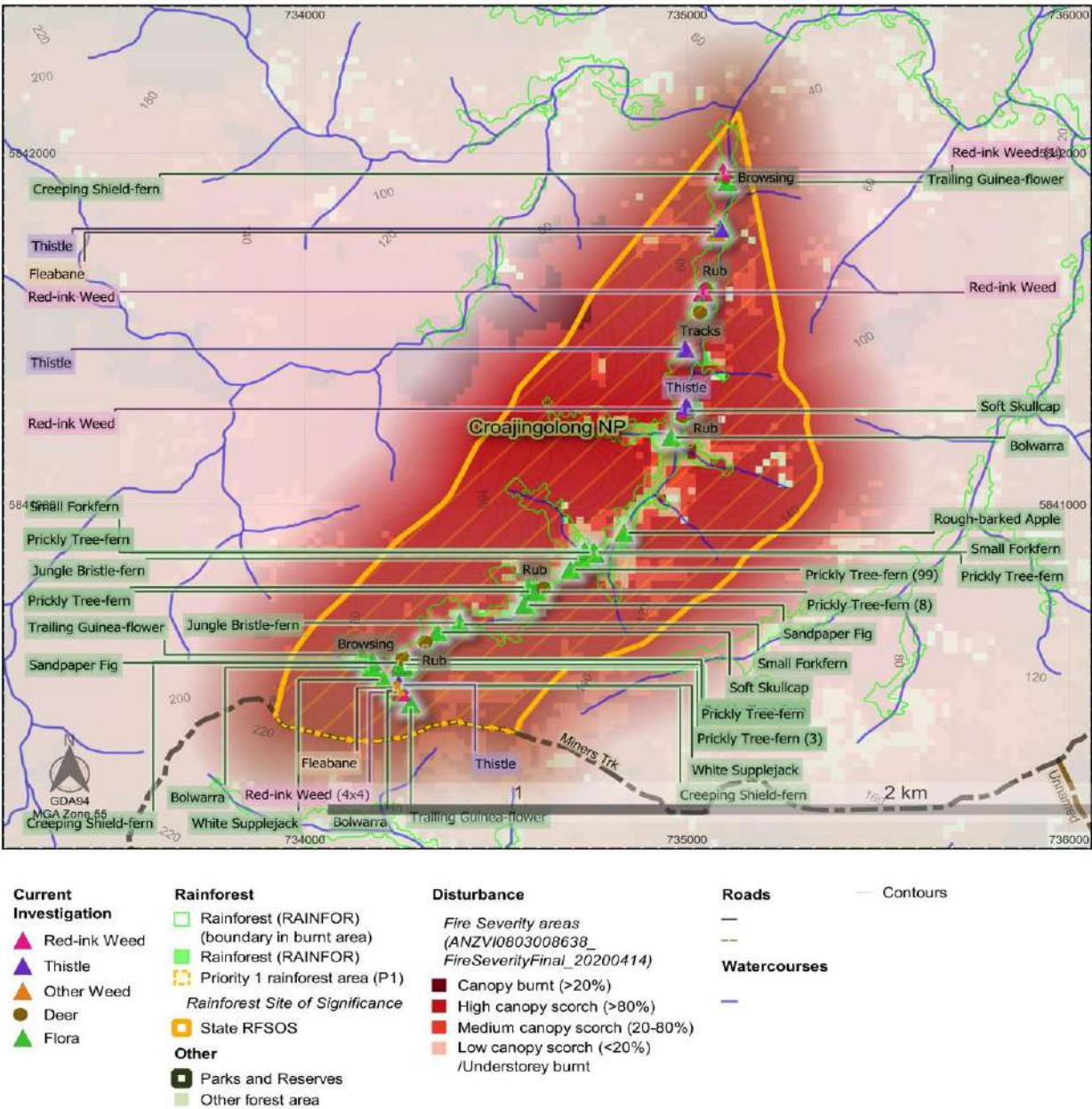
Figure 121: DOU493FA_Prickly Tree-fern



Figure 122: DOU487FB_Small Forkfern

9.10 RFSOS site map showing weed, deer, rare plant locations

Double Creek South Branch - Miners Trk (EG112) State Rainforest Site of Significance



Spatial data used the se assessments was access via the Victorian Government 's Spatial Data li-
brary and included:

Dataset name	Full title
RFSOS100	Sites of Significance for Rainforest
RAINFOR	Rainforest Mapping for state-wide Victoria
VBA_FLORA25	Victorian Biodiversity Atlas flora records (unrestricted) for sites with high spatial accuracy
BUSHFIRE_SEVERITY_EAST_AND_NORTHEAST_VICTORIA_2019-20 (FIRE_SEV in this report)	Fire severity map of the major fires in Gippsland and north east Victoria in 2019/20 (version 1.0) (ANZVI0803008638)
FIRE_HISTORY	Fire History Records of Fires primarily on Public Land
Timber_Release_Plan	Timber_Release_Plan (VicForests, September 2021)
LOG_SEASON	Harvested Logging Coupes (One layer per logging season)
MOG	Modelled old-growth forest
PARKRES	Parks and Conservation Reserves (PARKRES)
FMZ100_V_ZONE	Forest Management Zones - Simplified View
TR_ROAD	Road Network - Vicmap Transport
HY_WATERCOURSE	Watercourse Network 1:25,000 - Vicmap Hydro
EL_CONTOUR	Contour 1:25,000 - Vicmap Elevation
VMADMIN_LGA_POLYGON	Local Government Area Boundaries (Property) (polygon) - Vicmap Admin

All waypoints and related spatial information generated by this project is available upon request from: tomcrook@egcmn.org.au

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