East Gippsland Post Bushfire

Rainforest Sites of Significance

Site condition assessments, weeds and deer

June 2021

Project Summary and Condition Assessment Statements overview

In February and March 2021 ten Rainforest Sites of Significance (RFSOS) in East Gippsland affected by the 2019-2020 summer bushfires were assessed for the presence of weeds, deer sign, rainforest and general site condition.

RFSOS assessments involved a vehicle-based component that inspected all of the safely trafficable 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.

This work was made possible with the generous support of the Ross Trust (www.rosstrust.org.au)

The 10 Rainforest Sites of Significance assessed were:

	Site Name	Site ID
•	Dyer Creek	EG50
•	Murrungowar	EG52
•	Glen Arte	EG70
•	Kanuka Creek (South Branch)	EG76
•	Combienbar River	EG82
•	Hensleigh - Far Creek	EG85
•	Serpentine Creek	EG87
•	Sydd Creek	EG88
•	Log Bridge Creek	EG96
•	Brown Creek (Future Trail)	EG101

Date of field assessments
February and March 2021

Field surveyors
Andrew Lincoln
Owen Hanson

For further information:
Spatial data and appendices contact:
tomcrook@egcmn.org.au
Ph: 0417551 14

Contents

Figure 1: Gippsland Waratah (Hensleigh – Far Creek RFSOS. Flowering. March 2021)

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 is funded by the Ross Trust.*
>
> *10 sites where rainforest stands occur(ed) pre-fire within priority 1 areas under the 'Rainforest Sites of Significance' schema ('RFSOS100' layer) as delineated in 'Rainfor2019' within the fire footprint are to be assessed for weeds and deer.*
>
> *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	VBA records (EGSHIRE +50km)	Recorded within current project
1	**African Boxthorn**	*Lycium barbarum*	88	
2	**African Lovegrass**	*Eragrostis curvula*	1322	
3	**Agapanthus sp.**	[*Agapanthus praecox subsp. Orientalis*]	6	
4	**Blackberry**	*Rubis fruiticosus ssp. Agg.*	3838	X
5	**Blue periwinkle**	*Vinca major*	48	
6	**Boneseed**	*Chrysanthemoides monilifera [subsp. monilifera]*	47	
7	**Bitou Bush**	*[Chrysanthemoides monilifera subsp. rotundata]*	0	
8	**Cape Broom**	*Genista monspessulana*	42	
9	**Cape Ivy**	*Delairea odorata*	28	
10	**English Ivy**	*Hedera helix*	24	
11	**Cotoneaster spp.**	*Cotoneaster spp.*	9	
12	**Dolichos pea**	*Dipogon lignosus*	13	
13	**Gorse**	*Ulex europaeus*	81	
14	**Himalayan Honeysuckle**	*Leycesteria formosa*	15	
15	**Ink Weed**	*Phytolacca octandra*	31	X
16	**Madeira Vine**	*Anredera cordifolia*	3	
17	**Madeira Winter Cherry**	*Solanum pseudocapsicum*	*46*	
18	**Mirror Bush**	*Coprosma repens*	9	
19	**Privet**	*Ligustrum lucidum*	0	
20	**Ragwort**	*Jacobaea vulgaris*	504	
21	**Spanish Heath**	*Erica lusitanica*	11	
22	**St. John's Wort**	*Hypericum perforatum*	557	
23	**Thistle spp.**	*Various*	4422	X
24	**Tutsan**	*Hypericum androsaemum*	13	X
25	**Wandering Tradescantia**	*Tradescantia fluminensis*	38	X
26	**Watsonia spp.**	*Watsonia spp.*	14	

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 Rainforest Sites of Significance.

2 Methods

2.1 Data sources

From site selection to final map production spatial data sources 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 such as from 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 sources relied upon throughout this project (unless specified otherwise[1]) have been obtained from the Victorian government's "Spatial Datamart", a repository of Victorian public spatial data and was sourced from http://services.land.vic.gov.au/SpatialDatamart/ (managed by the Victorian Department of Environment, Land, Water and Planning).[2]

Spatial data files used within this project include:

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, 12/15/2020)
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

Google Satellite imagery[3] 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]

Flora species identification 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 most recent publication of the Victorian Biodiversity Atlas (VBA) (which incorporates the "Victorian threatened species advisory lists"[6]), as well "Provisional Victorian assessments" undertaken within the Victorian government's "Conservation Status Assessment Project".[7]

1 For example: "Timber_Release_Plan" [spatial data file], VicForests, 12/15/2020
2 "Spatial Datamart", http://services.land.vic.gov.au/SpatialDatamart/, State Government of Victoria, accessed 02-04/2021
3 "Google Satellite imagery", https://mt1.google.com/vt/lyrs=s&x={x}&y={y}&z={z}, accessed 02-04/2021
4 "QGIS A Free and Open Source Geographic Information System", https://qgis.org/en/site/
5 "VicFlora", https://vicflora.rbg.vic.gov.au/, Royal Botanic Gardens Board Victoria, accessed 02-04/2021
6 "Advisory list of rare or threatened plants in Victoria – 2014", The State of Victoria Department of Environment and Primary Industries, 2014

2.2 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. 21 of these 100 sites had already been surveyed prior to the commencement of this project. Of the remaining ~80 sites, 10 were selected that had impacts from varying fire severity classes in the 2019-2020 summer bushfires as well a selection of differing rainforest types. Each of the sites are located in the central parts of the EG Shire, from the Murrungowar area in the west to Mount Drummer east of Cann River in the east, and from the southern fall of the Errinundra Plateau off Coast Range Road in the north to just south of the Princess Highway in the south around Serpentine Creek.

The 10 Rainforest Sites of Significance selected and assessed were:

#	Site Name	Site ID
1	**Murrungowar**	EG52
2	**Dyer Creek**	EG50
3	**Glen Arte**	EG70
4	**Sydd Creek**	EG88
5	**Serpentine Creek**	EG87

#	Site Name	Site ID
6	**Brown Creek (Future Trail)**	EG101
7	**Log Bridge Creek**	EG96
8	**Combienbar River**	EG82
9	**Kanuka Creek (South**	EG76
10	**Hensleigh - Far Creek**	EG85

2.3 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.

2.4 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.

7 “Conservation Status Assessment Project- List of taxa including preliminary Victorian assessments” (Accessed on-line at: “Conservation Status Assessment Project”, https://www.environment.vic.gov.au/conserving-threatened-species/conservation-status-assessment-project, State Government of Victoria, accessed 02/04/2021)

3 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 4-13. Each RFSOS Condition Assessment Statement consists of the following format:

3.1 RFSOS Condition Assessment Statement format

Rainforest Site of Significance summary (Site name)

- RFSOS site overview (rainforest, fire impacts and disturbances summary)
  (Note: spatial analysis figures in this section are rounded to nearest whole number)
- Roads/tracks surveyed
- P1 areas surveyed summary
- Notes and photos of rainforest and general site condition
  (see also Appendix A-C)
- Map of rainforest and general site condition notes locations
  (see also Appendix E)
- 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)
- Map of weed species recorded
  (see also Appendix E)
- 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)
- Map of deer sign encountered
  (see also Appendix E)
- 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)
- Map of rare or threatened flora and other significant findings
  (see also Appendix E)
- Spatial data of rare or threatened flora and other significant findings
  (see Appendix A)

3.2 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 site condition notes recorded during the fieldwork as well as relevant notes accompanying those locations. Notes are included on weed species, abundance, growth stage, the type of deer sign observed, details on rare or threatened flora encountered, and spatially located notes on rainforest and general site condition. 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. Also included is a list of rainforest flora species observed to have been browsed by deer at various locations within the rainforest field assessments and other flora species discussed within this report. Appendix E contains maps of each site displaying the weeds, deer, rare or threatened flora and site notes and locations.

3.2.1 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

4 Murrungowar (RFSOS Site: EG52) Condition Assessment Statement

4.1 Rainforest Site of Significance summary (Murrungowar)

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

The 898 hectare Murrungowar "Regional" RFSOS contains 211 hectares of mapped rainforest, all of which is mapped as Warm Temperate Rainforest (RAINFOR spatial dataset). Parts of a 15 hectare area of mapped rainforest in the north east of the site, observable from Greens Road, contain large Cool Temperate Rainforest canopy species such as Southern Sassafrass and Black Oliveberry. These and other "overlap" Warm Temperate and Cool Temperate rainforest elements are present within the site.

The 2019-2020 summer fires affected 66% (590 ha) of the RFSOS and 59% (125 ha) of the rainforest within the RFSOS, with 29% (61 ha) of the rainforest impacted by higher severity fire (medium canopy scorch and canopy burnt), 30% (64 ha) by lower severity fire (low canopy scorch but understorey burnt) and 41% (86 ha) remaining unburnt (RAINFOR & FIRE_SEV spatial datasets).

A "Bushfire" from 1981 is recorded covering approximately 50 ha of the RFSOS and "Fuel Reduction Burning" is recorded over approximately 139 hectares of the site, though these areas are instead likely "post logging burns" as each of the fire boundaries follow recorded logging history boundaries (FIRE_HISTORY and LOGSEASON spatial datasets).

Approximately 198 hectares (22%) of the RFSOS is mapped as been subject to high intensity logging in the past such as from "Clearfelling" and "Seed Tree" logging, 148 hectares since 1990. None of this logging was recorded within the "Priority 1" areas of the RFSOS, though evidence of older logging, such as the presence of stumps, was recorded in some parts of this area (LOGSEASON spatial dataset).

Many roads within the RFSOS were subject to post fire clearing and bulldozing and recent chemical spraying was observed, including large scale "boom" spraying on the roadside of the major roads intersecting the site – Murrungowar and Greens roads – as well some targeted weed spraying appearing targeted at Blackberry on other smaller roads, despite many Blackberries in these areas not apparently sprayed/killed.

4.1.2 Roads/tracks surveyed

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

Road name	Survey status/note
Greens Road	Surveyed
Hugg Road	Not surveyed (overgrown/impassable)
Jack Rich Divide Track	Surveyed
Morrisons Track	Surveyed
Murrungowar Road	Surveyed
Rocky Jack Divide Track	Surveyed

4.1.3 P1 areas surveyed summary

The Murrungowar 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 206 hectares in total and contains 67 hectares of mapped rainforest (RAINFOR) in the upper catchment of the Rocky River.

4.1.4 Notes and photos of rainforest and general site condition

With around two thirds of the Murrungower RFSOS affected by fire most rainforest stands within the site have been impacted by varying degrees of fire severity. Sclerophyll forest dominated slopes extensively impacted by high severity canopy scorch fire surround both the largest rainforest areas in the north-west of the site as well around the main rainforest stand in the south east, within the RFSOS P1 area.

Figure 2: MURA34S_Severely burnt sclerophyll forest area of RFSOS catchment

Figure 3: MURA14S_View of burnt sclerophyll forest and surviving rainforest in gully

Figure 4: MURA22R_Surviving rainforest in larger rainforest area impacted by fire

During the walking based assessment of the RFSOS in the south eastern P1 area it was observed at many locations where fire severity in sclerophyll forest adjacent rainforest was moderate to high, i.e. with at least 20-80% canopy scorch, fire within the rainforest stand tended to be greater, resulting in similar crown scorch of rainforest canopy species or more total damage to rainforest understorey. Where fire in the sclerophyll forest slopes adjacent rainforest was a lower severity, i.e. with only understorey fire, the fire boundary tended to either stop at the edge of the rainforest stands' canopy species extent, burn or scorch the rainforest canopy at this boundary and/or include understorey fire within the rainforest stand though largely without impact to the rainforest canopy species.

Large unburnt rainforest sections (>~2ha) were encountered central to and in the downstream sections of the P1 area. Some unburnt narrower and more deeply dissected sections beside the central stream within the P1 area were also found without fire, or with only limited understorey fire encroachment. In these sections, particularly the upper reaches of the Rocky River, a large population of surviving Slender and Skirted Tree-ferns were found, though some individuals were also found killed by fire.

Figure 5: MURA64R_Extensive Forest Bindweed growing in moderately burnt rainforest

Figure 6: MURB13RF_Servere understorey burn. Moderate to severe canopy burn

Figure 7: MURA65R_Large rainforest area understorey burnt and partial canopy killed

Extensive areas of both sclerophyll forest and rainforest area understorey killed by fire were abundant with pioneer species including Forest Bindweed, Forest Pennywort, Incense Plant and also Black-fruit Nightshades, among others.

Rainforest canopy and other species regeneration was observed throughout the site, including both epicormic and basal re-sprouting from canopy species such as Lilly Pilly. Eucalypt seedling recruitment was observed in both understorey and canopy burnt rainforest areas. While recruitment of these species are likely to have significant impact on the rainforest stands in the RFSOS no large areas of eucalypt only recruitment areas within the rainforest without also rainforest species recruitment were observed, though they may be present. Effects on the rainforest stands are likely to be greatest closest to the extents of the many “fingers” of the stand that extend towards the catchment boundary of the Rocky River, causing the rainforest in these areas to contract or become fragmented and smaller isolated sections, at least in terms of rainforest canopy species dominating a particular area where they had done prior to the 2019-20 fires.

Figure 8: MURB17RF1_Moderate understorey and canopy burn. Extensive Forest Pennywort area

Figure 9: MURA51R_Fire affected rainforest and rainforest species regeneration

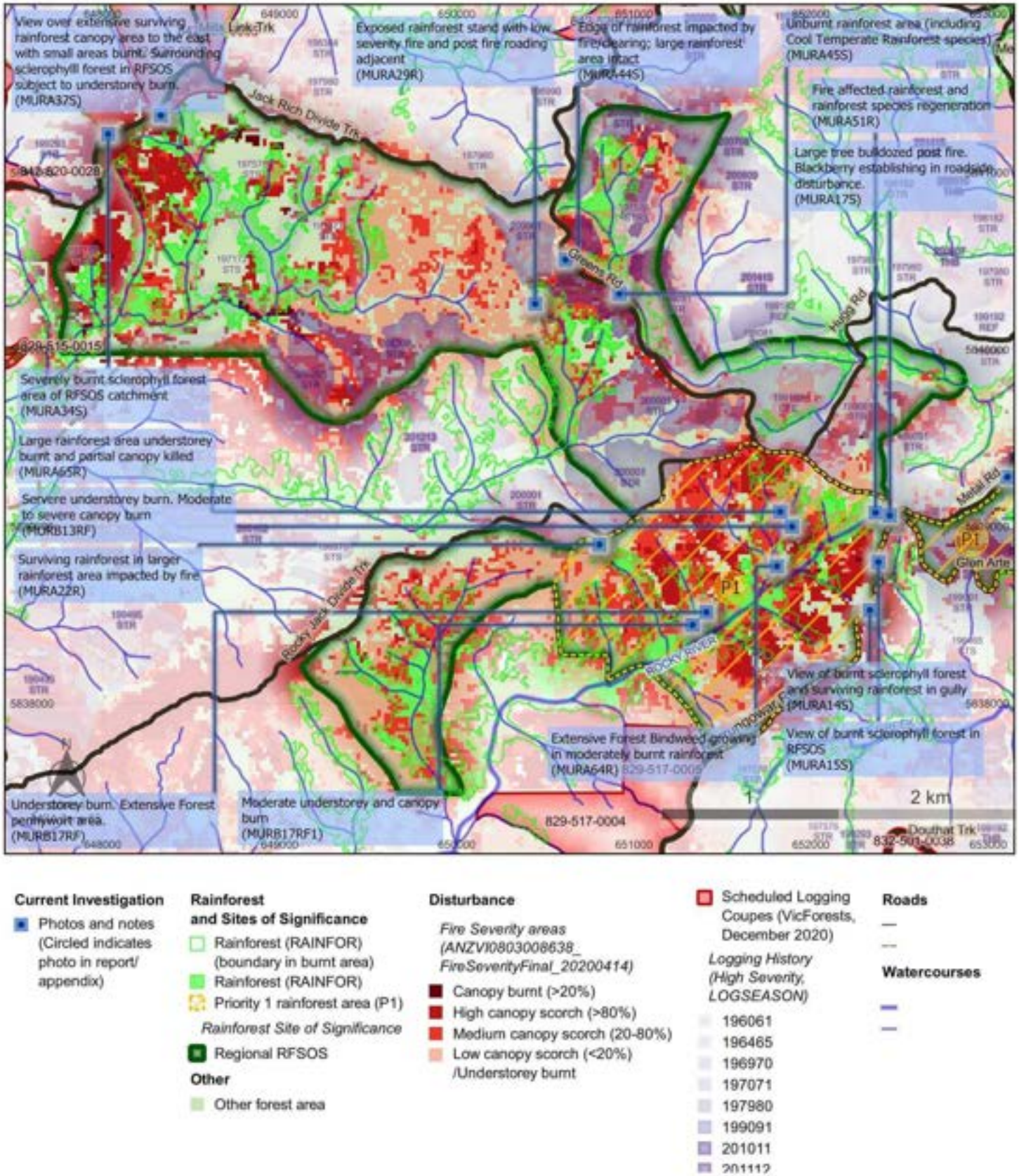
Figure 10: MURA51R_Fire affected rainforest and rainforest species regeneration

Figure 11: MURA17S_Large tree bulldozed post fire. Blackberry establishing in roadside disturbance

Figure 12: MURA45S_Unburnt rainforest area (including Cool Temperate Rainforest species)

4.1.5 Map of rainforest and general site condition notes locations

Murrungowar (EG52) Regional Rainforest Site of Significance



4.2 Weeds (Murrungowar)

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

Blackberry and Thistle were the only target weed species (see Chapter 1) recorded throughout the Murrungowar RFSOS. Both Blackberry and Thistle were found establishing post fire along roadsides as scattered individual plants or as clumps/patches, as well as within sclerophyll forest and rainforest areas. Where large clumps (i.e. greater than 4×4m) of either species were encountered the specific location was recorded with a waypoint (See Appendix A) and often photographed (See Appendix C). During the walking based component of the assessment single plant or small clump locations were found isolated within or at the edge of a rainforest area. During the vehicle based component of the assessment where numerous isolated or scattered individuals were found along an entire specific roadsides a waypoint was created at a central location along the road between an intersection of two roads (or other feature) as described in the waypoint notes and total approximate number of individuals in this area was recorded.

Figure 13: MURA18W - Blackberry establishing in post fire road works

Most roads surveyed throughout the RFSOS had some Blackberry and Thistle scattered along their roadside and only a few larger clumps were found and recorded. Throughout the main rainforest stand within the P1 area of the RFSOS only isolated, mostly only juvenile or smaller Blackberry plants establishing post fire, were recorded. Thistle plants, usually at the edge of or within a gap in a rainforest area, were found ranging from juvenile to flowering plants.

Figure 14: MURA42W - Large Blackberry patch along roadside following post fire roadworks – Continuous along roadside on Jack Rich Divide Trk 400m west of Greens Rd intersection establishing in post fire roadworks

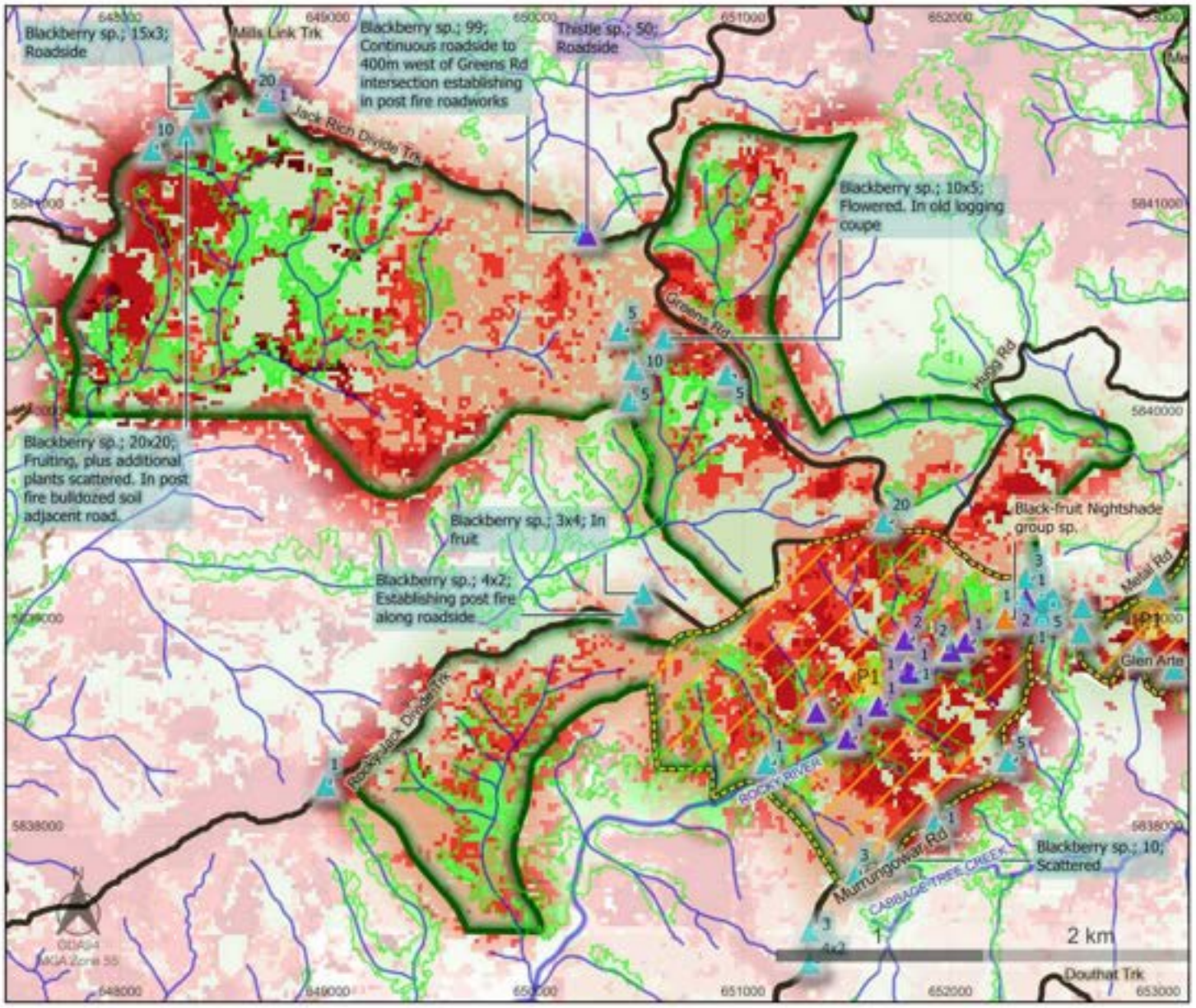
Whilst not listed as target weeds for this project introduced Fleabane species (*Erigeron spp.*) and Black-fruit Nightshades (*Solanum spp.*) were also widespread and abundant throughout the RFSOS. See Appendix D for further discussion of these species groups. Fleabane was present in many settings within most the RFSOS, from roadsides to small areas of disturbance at the edge of understorey burnt rainforest for example. Black-fruit Nightshades were also extensive and found in many settings, often abundantly within and around fire damaged rainforest areas (including where the rainforest was impacted only by understorey fire). Locations and photos of Fleabane and Black-fruit Nightshades were generally not recorded throughout this project.

Figure 15: MURA69W – Thistle flowering in post fire roadside clearing

Figure 16: MURA69W – Thistle flowering in rainforest following understorey fire

4.2.2 Map of weed species recorded

Murrungowar (EG52) Regional Rainforest Site of Significance



Current Investigation

Weeds

- Blackberry sp.
- Thistle sp.
- Other Weed

Rainforest and Sites of Significance

- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance

- Regional RFSOS

Other

- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)

- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

Roads

Watercourses

4.3 Deer (Murrungowar)

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

Deer sign, including tracks, scat, browsing and rubbing were recorded at 9 locations throughout the Murrungowar RFSOS assessment. Most significantly this included observations of deer rubbing and browsing on rainforest canopy species, including deer rubs on Lilly Pilly (*Syzygium smithii*) and browsing on Blue Oliveberry (*Elaeocarpus reticulatus*) and Muttonwood (*Myrsine howittiana*).

Figure 17: MURA68D_Rub on Lilly Pilly (Syzygium smithii); Extensive Browsing on Muttonwood (Myrsine howittiana), 5x10

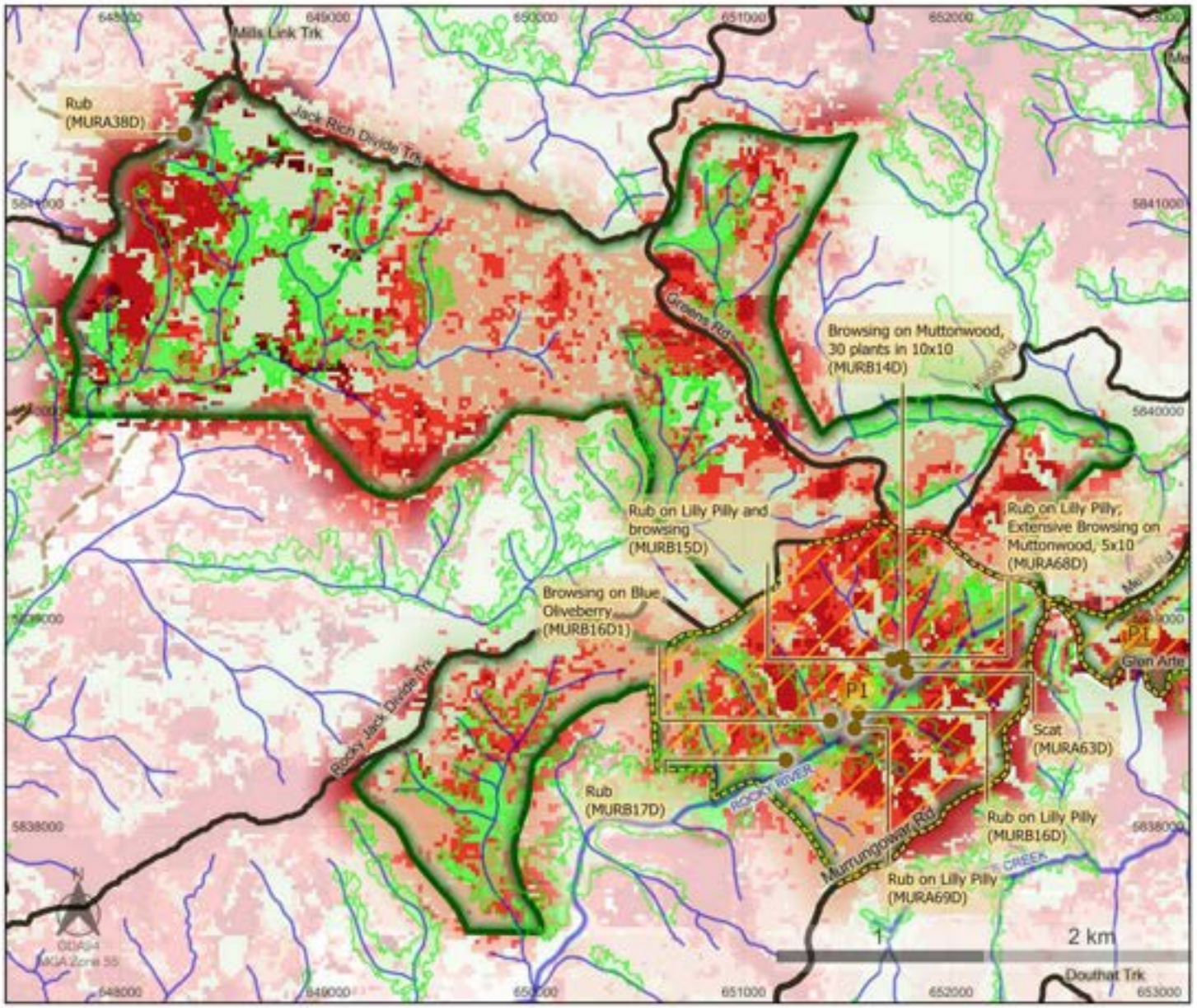
Figure 18: MURB15D_Rub on Lilly Pilly (Syzygium smithii) and browsing

Figure 19: MURB14D_Browsing on Muttonwood (Myrsine howittiana), 30 plants in 10x10

Figure 20: MURB16D1_Browsing on Blue Oliveberry (Elaeocarpus reticulatus)

4.3.2 Map of deer sign encountered

Murrungowar (EG52) Regional Rainforest Site of Significance



4.4 Rare or threatened flora and other significant findings (Murrungowar)

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

Throughout the Murrungowar RFSOS assessment a total of seven "Victorian Rare or Threatened" (VROT) flora species were recorded. These were:

Common Name	Scientific Name	Victorian Advisory List	FFGA	Provisional Victorian assessment
Native Hemp	Androcalva rossii	Vulnerable		Critically Endangered
Slender Tree-fern	Cyathea cunninghamii	Vulnerable	Listed	Critically Endangered
Skirted Tree-fern	Cyathea ×marcescens	Vulnerable		Critically Endangered
Small Forkfern	Tmesipteris parva	Rare		Critically Endangered
Japanese Lady-fern	Deparia petersenii subsp. congrua	Vulnerable		Endangered
Trailing Guinea-flower	Hibbertia dentata	Rare		Endangered
River Hook-sedge	Carex nemoralis	Rare		Endangered

While one young Native Hemp (*Androcalva rossii*) was discovered growing along the roadside of Rocky-Jack Divide Track all other rare or threatened species recorded were found within or adjacent the rainforest areas in the P1 area of the RFSOS during the walking based assessment.

Figure 21: MURA24F_Native Hemp

Figure 22: MURA54F_Small Forkfern

Figure 23: MURA67F_River Hook-sedge surviving in unburnt rainforest understorey close to understorey fire extent seen in background of image

Trailing Guinea-flower found regrowing adjacent rainforest stand in the P1 area of the RFSOS:

Figure 24: MURA72F_Trailing Guinea-flower

Japanese Lady-fern (*Deparia petersenii subsp. congrua*) was found at two locations along Rocky River. Japanese Lady-fern is a very rarely encountered fern with only 27 records of the species on the Victorian Biodiversity Atlas (VBA_FAUNA25 and VBA_FAUNA100 spatial datasets) from throughout Victoria. Japanese Lady-fern was also found within the Combienbar River RFSOS assessment within this project.

Figure 25: MURB08F_Japanese Lady-fern_3

Figure 26: MURB08F_Japanese Lady-fern_3

Figure 27: MURB18F_Japanese Lady-fern

Figure 28: MURB18F_Japanese Lady-fern

The most significant populations of Slender and/or Skirted Tree ferns (*Cyathea cunninghamii* and/or *Cyathea ×marcescens*) were found scattered over an approximately 400m stretch of the upper reaches of the Rocky River within the P1 rainforest area.

Figure 29: MURB02F_Slender Tree-fern_2

Figure 30: MURB02F_Slender Tree-fern_2

Figure 31: MURB02F_Slender Tree-fern_2

Figure 32: MURB02F_Slender Tree-fern_2

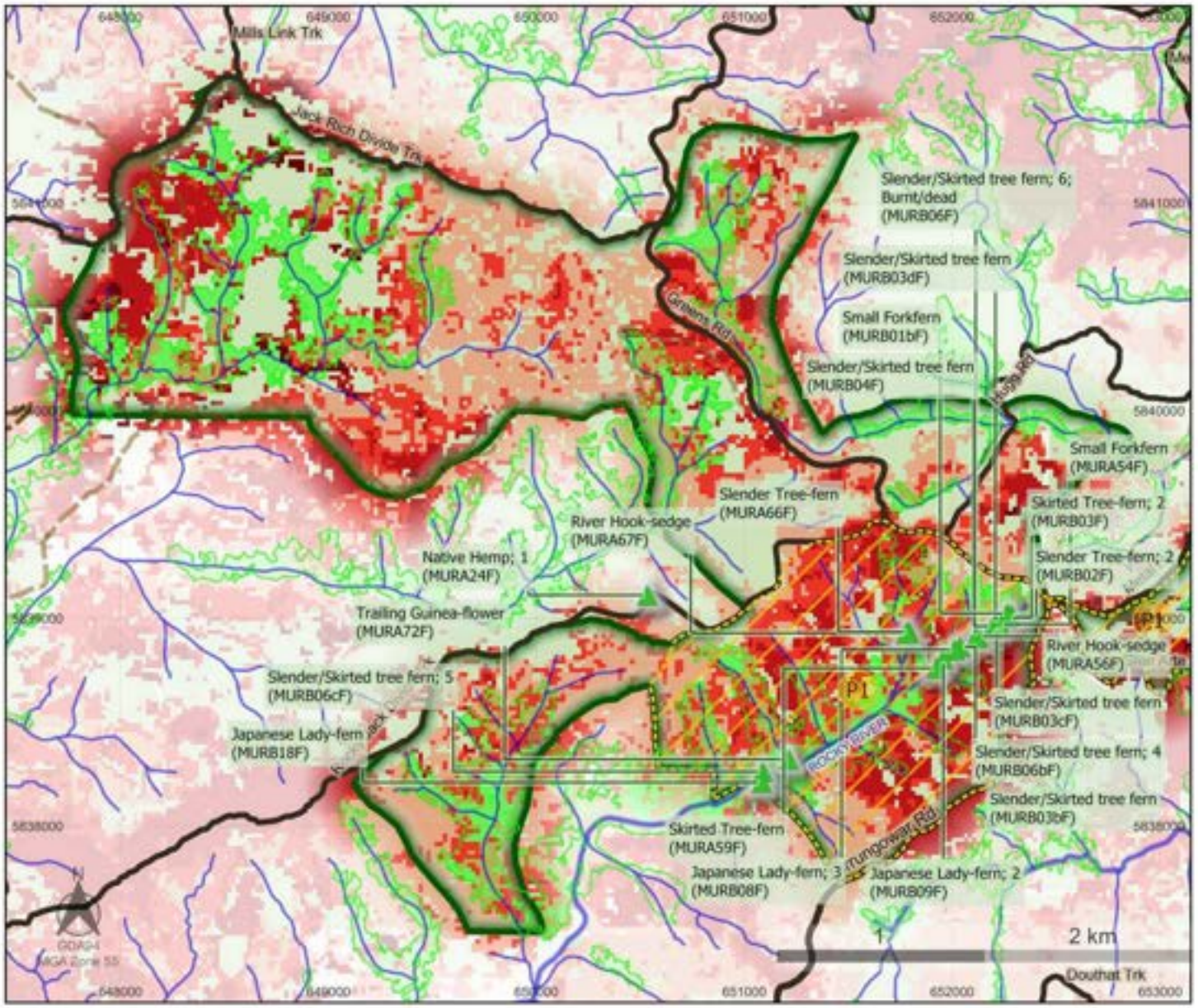
Figure 33: MURB02F_Slender Tree-fern_2

Figure 34: MURB04F_SlenderSkirted tree fern

Figure 35: MURB06F_6 Slender/Skirted tree ferns found burnt and dead in a severely burnt section of the main P1 area rainforest stand.

4.4.2 Map of rare or threatened flora and other significant findings

Murrungowar (EG52) Regional Rainforest Site of Significance



Current Investigation
- Flora

Rainforest and Sites of Significance
- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance
- Regional RFSOS

Other
- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)
- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

Roads

Watercourses

5 Dyer Creek (RFSOS Site: EG50) Condition Assessment Statement

5.1 Rainforest Site of Significance summary (Dyer Creek)

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

The 65 hectare Dyer Creek "Regional" RFSOS contains 9 hectares of mapped rainforest, all of which is mapped as Warm Temperate Rainforest (RAINFOR spatial dataset).

The 2019-2020 summer fires affected 76% (49 ha) of the RFSOS and 41% (4 ha) of the rainforest within the RFSOS, with 5% (<1 ha) of the rainforest impacted by higher severity fire (medium canopy scorch and canopy burnt), 36% (3 ha) by lower severity fire (low canopy scorch but understorey burnt) and 59% (5 ha) remaining unburnt (RAINFOR & FIRE_SEV spatial datasets).

Approximately 48 hectares (74%) of the RFSOS is mapped as been subject to high intensity logging in the past such as from "Clearfelling" and "Seed Tree" logging, 8 hectares since 1990. Mapped 1970's "Seed Tree" logging covers the majority of the "Priority 1" area of the RFSOS and the rainforest stand however, while evidence of prior logging and tracks were noted within and around the rainforest stand, significant parts of the rainforest stand itself remain intact/unlogged (LOGSEASON spatial dataset).

5.1.2 Roads/tracks surveyed

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

Road name	Survey status/note
Towzer Creek Track	Surveyed

5.1.3 P1 areas surveyed summary

The Dyer 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 15.23 hectares in total and contains 5.56 hectares of mapped rainforest (RAINFOR) in the headwaters of Dyer Creek, a tributary of the Cabbage Tree Creek.

5.1.4 Notes and photos of rainforest and general site condition

Around 20% of the Dyer Creek RFSOS was impacted by moderate to high severity fire with the remaining 80% either affected by lower severity understorey fire (56%) or no fire at all. Sclerophyll forest areas around the rainforest stands throughout the RFSOS experienced mostly low severity fire and the rainforest stands themselves were in most part observed to be impacted by only limited understorey fire incursions near the rainforest margin.

However, some areas of rainforest canopy species near the edge of the rainforest stand were killed and contraction of the pre-fire extent of the rainforest canopy species extent was observed, including at the southeastern edge of the RFSOS at the mapped extent of the rainforest boundary.

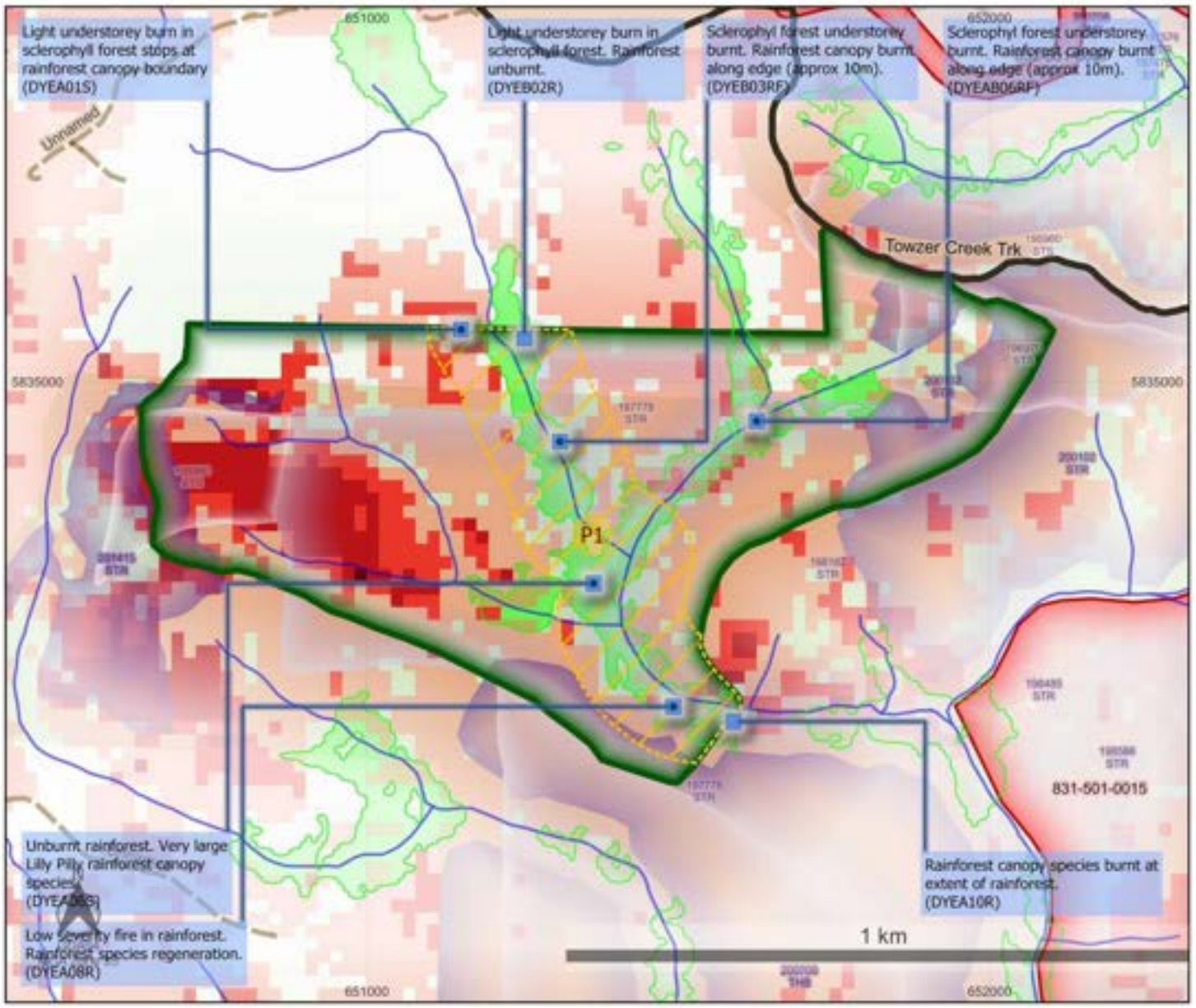
Figure 36: DYEA01S_Light understorey burn in sclerophyll forest stops at rainforest canopy boundary

Figure 37: DYEAB06RF_sclerophyll forest understorey burnt. Rainforest canopy burnt along edge

Figure 38: DYEB02R_Light understorey burn in adjacent sclerophyll forest. Rainforest unburnt

5.1.5 Map of rainforest and general site condition notes locations

Dyer Creek (EG50) Regional Rainforest Site of Significance



Current Investigation
- Photos and notes (Circled indicates photo in report/ appendix)

Rainforest and Sites of Significance
- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance
- Regional RFSOS

Other
- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)
- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

- Scheduled Logging Coupes (VicForests, December 2020)

Logging History (High Severity, LOGSEASON)
- 195960
- 196970
- 198485
- 201415

Roads

Watercourses

5.2 Weeds (Dyer Creek)

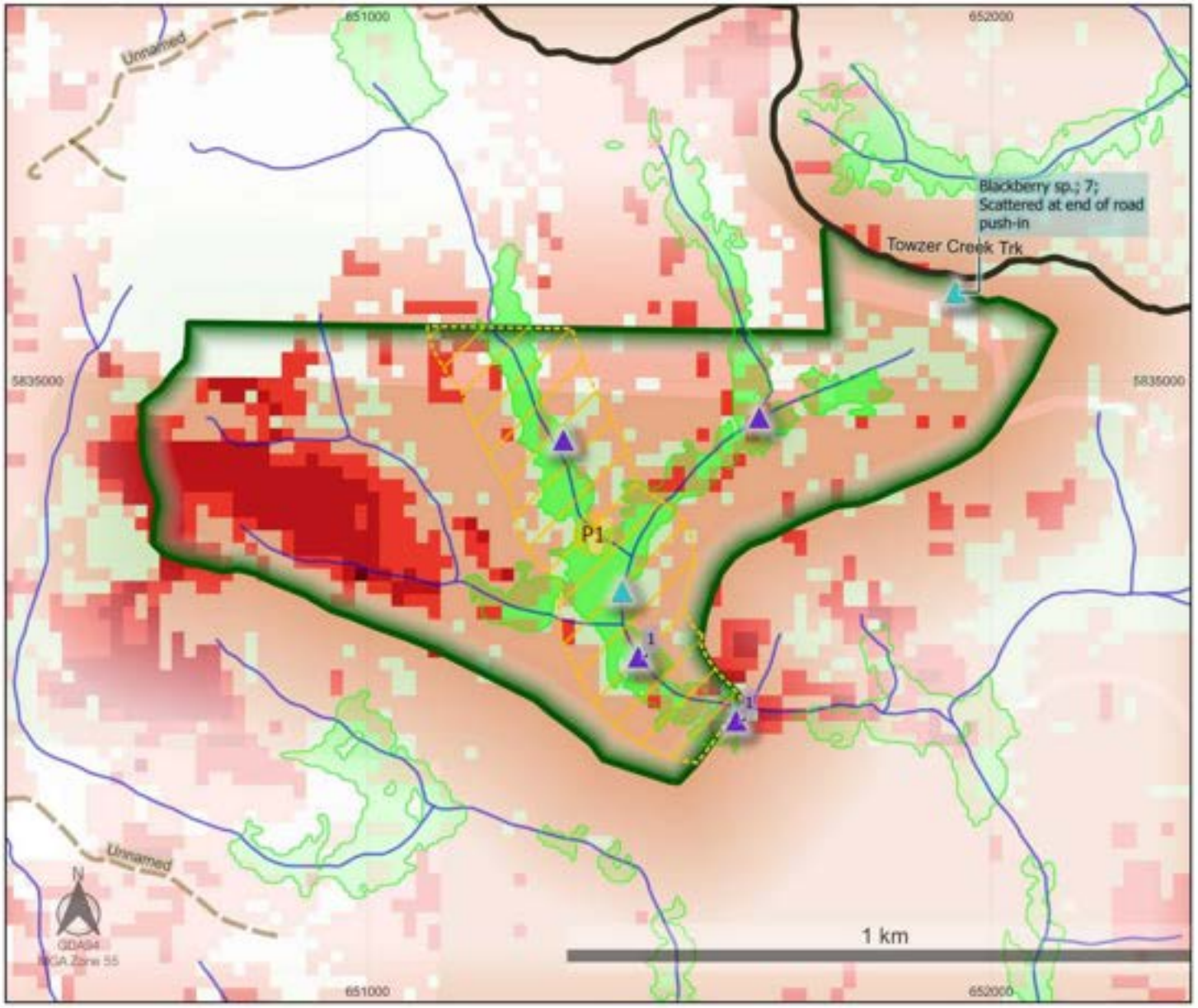
5.2.1 Notes and photos on the presence and abundance of target weeds

The Dyer Creek RFSOS is located immediately downstream from a private property farm that was observed to have extensive Blackberry, Thistle and Fleabane in and adjacent farm paddocks within the catchment of the RFSOS. However, within and adjacent to the rainforest stand only a few isolated locations of Blackberry and Thistle were observed at sites of disturbance from the 2019-20 fire. During the vehicle-based assessment a small patch of Blackberries were recorded off Towzer Creek Track at an old road works soil push in.

Figure 39: DYEA09W_Thistle sp._1_Flowering within understorey fire impacted sclerophyll forest adjacent burnt rainforest canopy species

5.2.2 Map of weed species recorded

Dyer Creek (EG50) Regional Rainforest Site of Significance



Current Investigation

Weeds

- Blackberry sp.
- Thistle sp.

Rainforest and Sites of Significance

- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance

- Regional RFSOS

Other

- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)

- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

Roads

Watercourses

5.3 Deer (Dyer Creek)

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

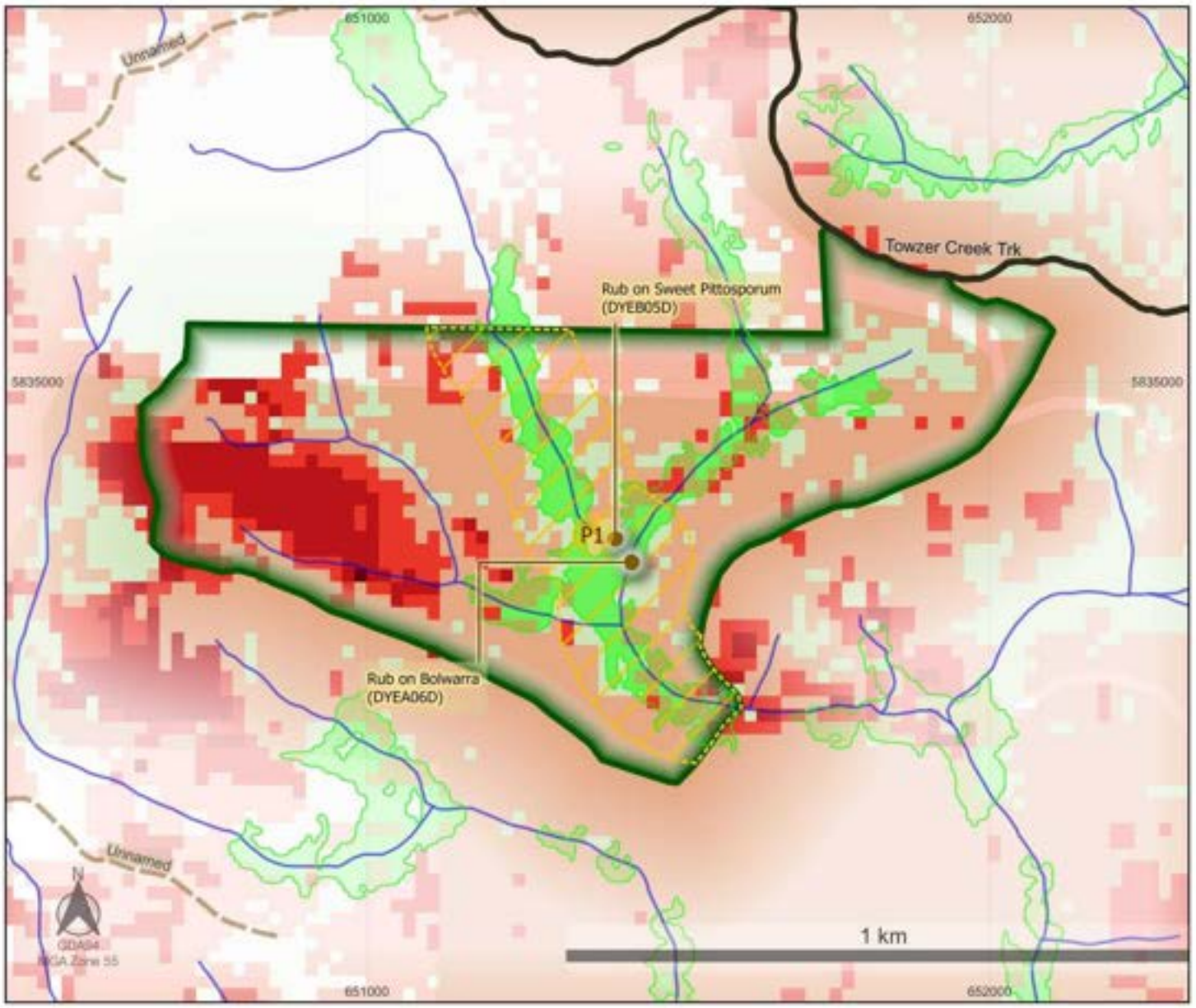
Within the Dyer Creek RFSOS only two locations of deer sign were recorded. This included a rub on Sweet Pittosporum and, most significantly, a rub on a large Bolwarra plant, a rare Victorian species that has been "provisionally assessed" to be an "endangered" species, within the State Government of Victoria's "Conservation Status Assessment Project".[8]

Figure 40: DYEA06D_Rub on Bolwarra

8 "Conservation Status Assessment Project- List of taxa including preliminary Victorian assessments" (Accessed on-line at: "Conservation Status Assessment Project", https://www.environment.vic.gov.au/conserving-threatened-species/conservation-status-assessment-project, State Government of Victoria, accessed 02/04/2021)

5.3.2 Map of deer sign encountered

Dyer Creek (EG50) Regional Rainforest Site of Significance



Current Investigation
- Deer

Rainforest and Sites of Significance
- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance
- Regional RFSOS

Other
- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)
- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

Roads

Watercourses

5.4 Rare or threatened flora and other significant findings (Dyer Creek)

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

Within the Dyer Creek RFSOS assessment three "Victorian Rare or Threatened" (VROT) flora species were recorded. These were:

Common Name	Scientific Name	Victorian Advisory List	FFGA	Provisional Victorian assessment
Oval Fork-fern	Tmesipteris ovata	Rare		Critically Endangered
Bolwarra	Eupomatia laurina	Rare		Endangered
Bristly Shield-fern	Lastreopsis hispida	Rare		Endangered

Figure 41: DYEA03F_Oval Fork-fern

Figure 42: DYEA04F_Bristly Shield-fern

Figure 43: DYEA05F_Bolwarra

In 2015 the Bristly Shield-fern was discovered in East Gippsland for the first time, in the Kuark forest area nearby (~10km NE).[9] Since that discovery, the Bristly Shield-fern was subsequently discovered in another nearby rainforest area about 5 km north east of this Dyer Creek discovery.[10] A further discovery was made during the Glen Arte RFSOS assessment of this project and is further discussed within the RFSOS Condition Assessment Statement for that site.

Bolwarra was discovered within the Dyer Creek RFSOS at two locations about 150m apart. At the second location (DYEA06bF) a large plant was found that had been heavily rubbed by deer. This location is close to the Dyer Creek and within the widest extent of Warm Temperate rainforest within the RFSOS. This area was largely unaffected by fire.

9 Fauna and Flora Research Collective, "150716 – Lastreopsis hispida et. al. detection report – Kuark Larissa Lane – AL_FFRC_65e", https://faunaandfloraresearchcollective.wordpress.com/the-species/warm-temperate-rainforest/, accessed 1 May 2021

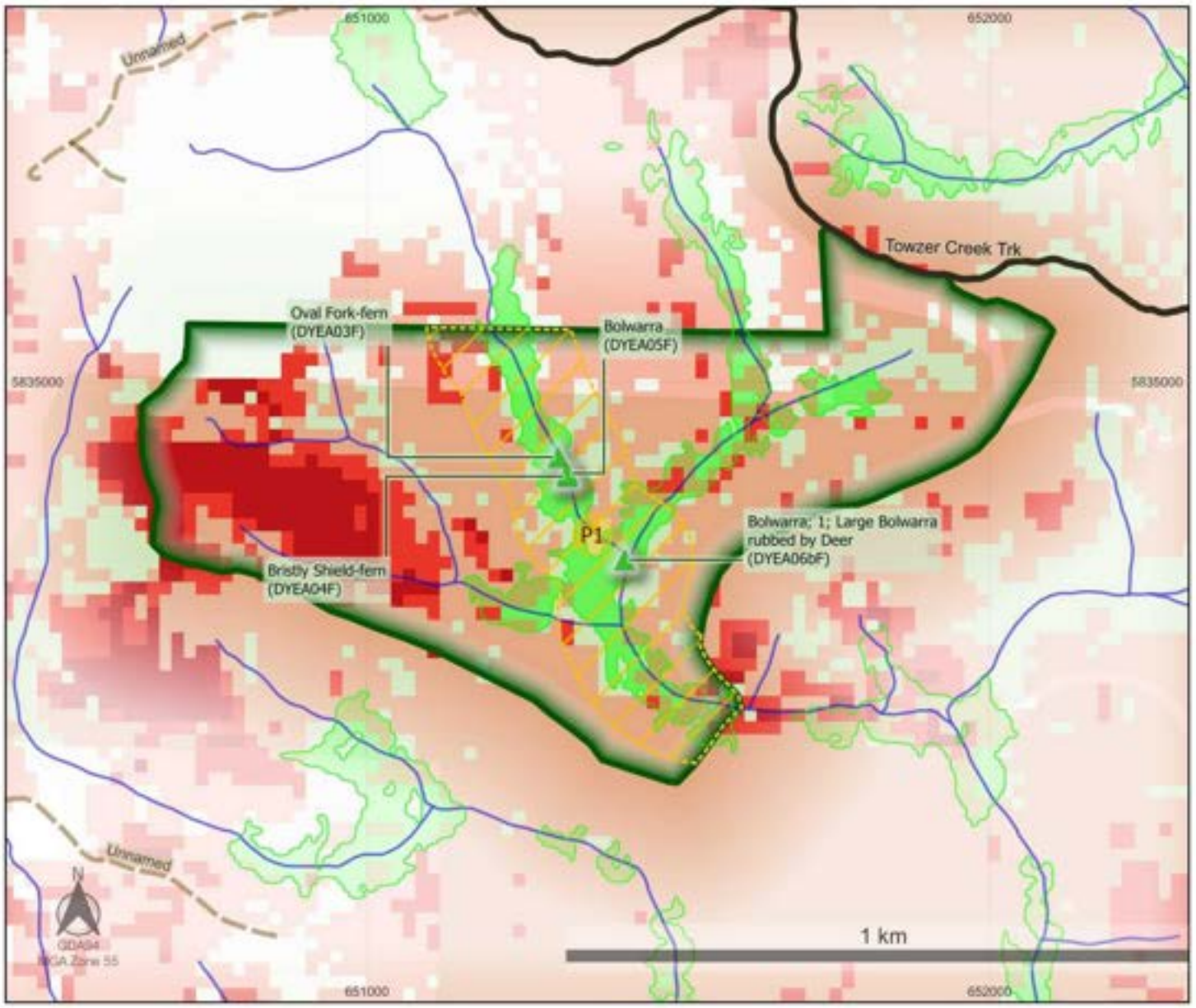
10 Goongerah Environment Centre, Slender and Skirted Tree-ferns and Bristly shield fern, coupes 832-502-0010, 832-502-0011 & 832-502-0019, https://www.geco.org.au/reports, accessed 1 May 2021

Figure 44: DYEA04F_Bristly Shield-fern

Figure 45: DYEA05F_Bolwarra

5.4.2 Map of rare or threatened flora and other significant findings

Dyer Creek (EG50) Regional Rainforest Site of Significance



Current Investigation
- Flora

Rainforest and Sites of Significance
- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance
- Regional RFSOS

Other
- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)
- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

Roads

Watercourses

6 Glen Arte (RFSOS Site: EG70) Condition Assessment Statement

6.1 Rainforest Site of Significance summary (**Glen Arte**)

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

The 1266 hectare Glen Arte “Regional” RFSOS contains 304 hectares of mapped rainforest, all of which is mapped as Warm Temperate Rainforest (RAINFOR spatial dataset), however overlap Warm Temperate-Cool Temperate rainforest was found during the assessment.

The 2019-2020 summer fires affected 69% (876 ha) of the RFSOS and 65% (198 ha) of the rainforest within the RFSOS, with 48% (147 ha) of the rainforest impacted by higher severity fire (medium canopy scorch and canopy burnt), 17% (52 ha) by lower severity fire (low canopy scorch but understorey burnt) and 35% (105 ha) remaining unburnt (RAINFOR & FIRE_SEV spatial datasets).

A majority of the RFSOS (greater than 800 ha) is mapped within the extent of the 1939 bushfire, around 400 ha within a 1959 bushfire, around 50 ha within a 1981 bushfire, and around 200 ha within a 1983 fuel reduction burn (FIRE_HISTORY spatial datasets).

Approximately 394 hectares (31%) of the RFSOS has been subject to high intensity logging in the past such as from “Clearfelling” and “Seed Tree” logging, 78 hectares since 1990. Approximately 50 ha of this logging was recorded within the “Priority 1” areas of the RFSOS. Within the largest surviving stand of overlap Warm Temperate Cool Temperate Rainforest large blackwood stumps were observed from previous unrecorded logging operations (LOGSEASON spatial dataset).

6.1.2 Roads/tracks surveyed

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

Road name	Survey status/note
Arte road	Surveyed
Arte shortcut road	Surveyed
Glen arte road	Surveyed
Larissa Lane	Surveyed
Metal link track	Surveyed
Metal road	Surveyed
Puggaree road	Surveyed

6.1.3 P1 areas surveyed summary

The Glen Arte RFSOS has three “Priority 1” (**P1**) areas (mapped in the RFSOS100 spatial dataset) that were surveyed as part of the walking based assessment. These P1 areas are 77, 117 and 214 hectares respectively and collectively they contain 154 hectares of mapped rainforest (RAINFOR), all within the Arte River catchment.

6.1.4 Notes and photos of rainforest and general site condition

The large Glen Arte RFSOS has been subject to a wide range of impacts from the 2019-20 bushfire including the most severe damage to large rainforest areas compared to other sites assessed within

the project. The majority of the RFSOS is within “High canopy scorch (>80%)” areas of the 2019-20 bushfire and includes sections within the P1 areas of the site (adjacent rainforest stands) that are categorised as the highest severity class, category 6 “Canopy burnt (>20%)”. Within and adjacent these highest severity fire class areas rainforest canopies were mostly killed and often only low epicormic resprouting was observed amongst rainforest canopy species.

Figure 46: GLEA45S_Rainforest canopy completely burnt/scorched along Arte River

Figure 47: GLEA57S_High severity fire in/adjacent rainforest (northern P1 area)

Figure 48: GLEA261c_High severity fire in sclerophyll and rainforest. Eucalypt spp. growing in/adjacent rainforest (northern P1 area)

In the northern P1 area of the site (north of Metal Link Track) large areas of high severity burnt rainforest were found and with almost no areas found unaffected. In these high severity areas large amounts of eucalypt and wattle spp. recruitment was found in and adjacent to areas formerly mapped as rainforest. The eastern P1 area (adjacent Arte Shortcut Road) had similar areas of high severity burnt rainforest with eucalypt spp. encroachment, though this process was observed to be less intense than in the more heavily impacted northern P1 area.

Figure 49: GLEA261c_High severity fire in sclerophyll and rainforest. Eucalypt spp. growing in/adjacent rainforest (northern P1 area)

Figure 50: GLEA260c_High severity fire in sclerophyll and rainforest. High Silver Wattle recruitment (northern P1 area)

Figure 51: GLEA61S_Eucalypt recruitment high in sclerophyll and present but lower in rain-forest sections (eastern P1 area)

Within the eastern P1 area, an example of high eucalypt recruitment around a large old Mountain Grey Gum within the rainforest area was also documented.

Figure 52: GLEA66S_Isolated Mountain Grey Gum in rainforest section with extensive post fire recruitment

However, even within the highest severity burnt rainforest areas where epicormic resprouting of rainforest canopy species was very low some basal resporouting was observed.

Figure 53: GLEA57S_High severity fire inadjacent rainforest

Figure 54: GLEA65R_Most rainforest canopy killed but resprouting including extensive Lilly Pilly coppicing. Low to no eucalypt recruitment.

Also within the northern P1 area 1 section of high to moderate severity burnt rainforest one area was found where some rainforest canopy and understorey species had survived and where both rainforest canopy and understorey species were resprouting epicormicly and basally. Significantly, within this area the rare, and provisionally assessed as endangered, Bristly Shield-fern was found.

Figure 55: GLEA256c_Rainforest species regrowing in burnt rainforest area

Figure 56: GLEA256c_Rainforest species regrowing in burnt rainforest area

The third (southwestern/central) P1 area of the RFSOS has two main sections, a central section (within the Arte River Flora Reserve) and a southwestern section (west of Metal Road and east of the flora reserve).

The southwestern section of the third P1 area is a large stand of predominantly Warm Temperate Rainforest that is largely unaffected from the 2019-20 bushfire. Significantly however, this rainforest also contains overlap warm and cool temperate rainforest with very large old rainforest canopy species, including Lilly Pilly as well as Southern Sassafrass (for example) growing beside each other. The majority of the rainforest within this section of the P1 area experienced only light to moderate severity fire impacts around the rainforest margin and ecotone.

Figure 57: GLEB23RF_Light understorey burn to rainforest edge (southwestern P1 section)

Figure 58: GLEB24RF_Unburnt rainforest (spatial data shows patches of burnt rainforest at this location)

Figure 59: GLEB25RF_Unburnt rainforest (spatial data shows patches of burnt rainforest at this location)

Figure 60: GLEB22RF_Unburnt overlap rainforest with Southern Sassafrass in centre left of image

The central P1 section within the Glen Arte Flora Reserve is largely a linear ~150 m buffer either side of the Glen Arte River. The eastern half of this section has what were pre-fire already smaller narrow linear and fragmented rainforest sections that are now severely impacted by fire. Near the eastern boundary of this section a rare and threatened Slender/Skirted Tree fern were found killed by fire.

Figure 61: GLEC02S_Rainforest severely burnt including Slender-Skirted tree ferns burnt

Figure 62: GLEC02S_Rainforest severely burnt including Slender-Skirted tree ferns burnt

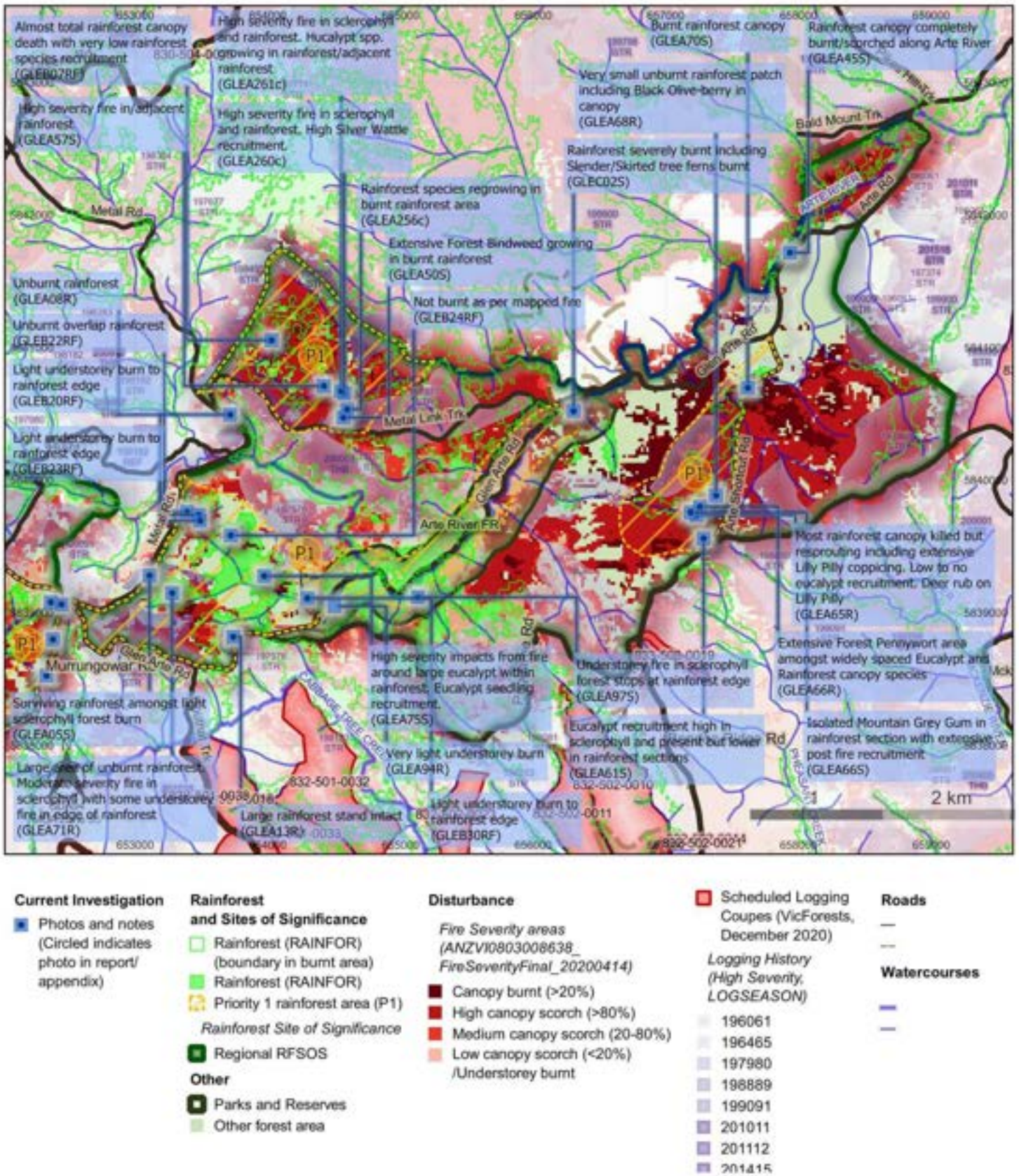
Figure 63: GLEC02S_Rainforest severely burnt. Large Lilly Pilly cut down in post fire roadworks

The western half of the central P1 section is largely unaffected by fire with only small sections with understorey fire incursions largely restricted to the rainforest margin. However, along Glen Arte Road within this section which runs parallel to the Glen Arte River, large patches of Wandering Trad are beginning to spread in to the rainforest stand (discussed further in following section).

Figure 64: GLEB30RF_Light understorey burn to rainforest edge

6.1.5 Map of rainforest and general site condition notes locations

Glen Arte (EG70) Regional Rainforest Site of Significance



6.2 Weeds (Glen Arte)

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

Four target weeds were found within the Glen Arte RFSOS. These were Blackberry spp., Thistle spp., and most significantly Tutsan and Wandering Trad. Other weeds recorded within the RFSOS included Great Mullein and White Arum-lily, with the later found growing along the Pugaaree Road verge near to an old farm.

Both Blackberry and Thistle were found establishing post fire along roadsides as scattered individual plants or occasionally as clumps/patches, as well as within sclerophyll forest and rainforest areas. During the walking based component of the assessment single plant or small clump locations were often found isolated within or at the edge of a rainforest area.

Figure 65: GLEA35W_Thistle sp._15x3_Flowered

Figure 66: GLEA47W_Blackberry sp._5x5 near Glen Arte Bridge_Some sprayed nearby, some not

Tutsan was found in low numbers streamside around the bridge over the Arte River near the intersection of Arte Road and Bald Mountain Track. 5 plants were found with one in seed.

Figure 67: GLEA48W_Tutsan_5_1 in seed

Figure 68: GLEA48W_Tutsan location_In stream log bridge created post-fire remaining in the Arte River

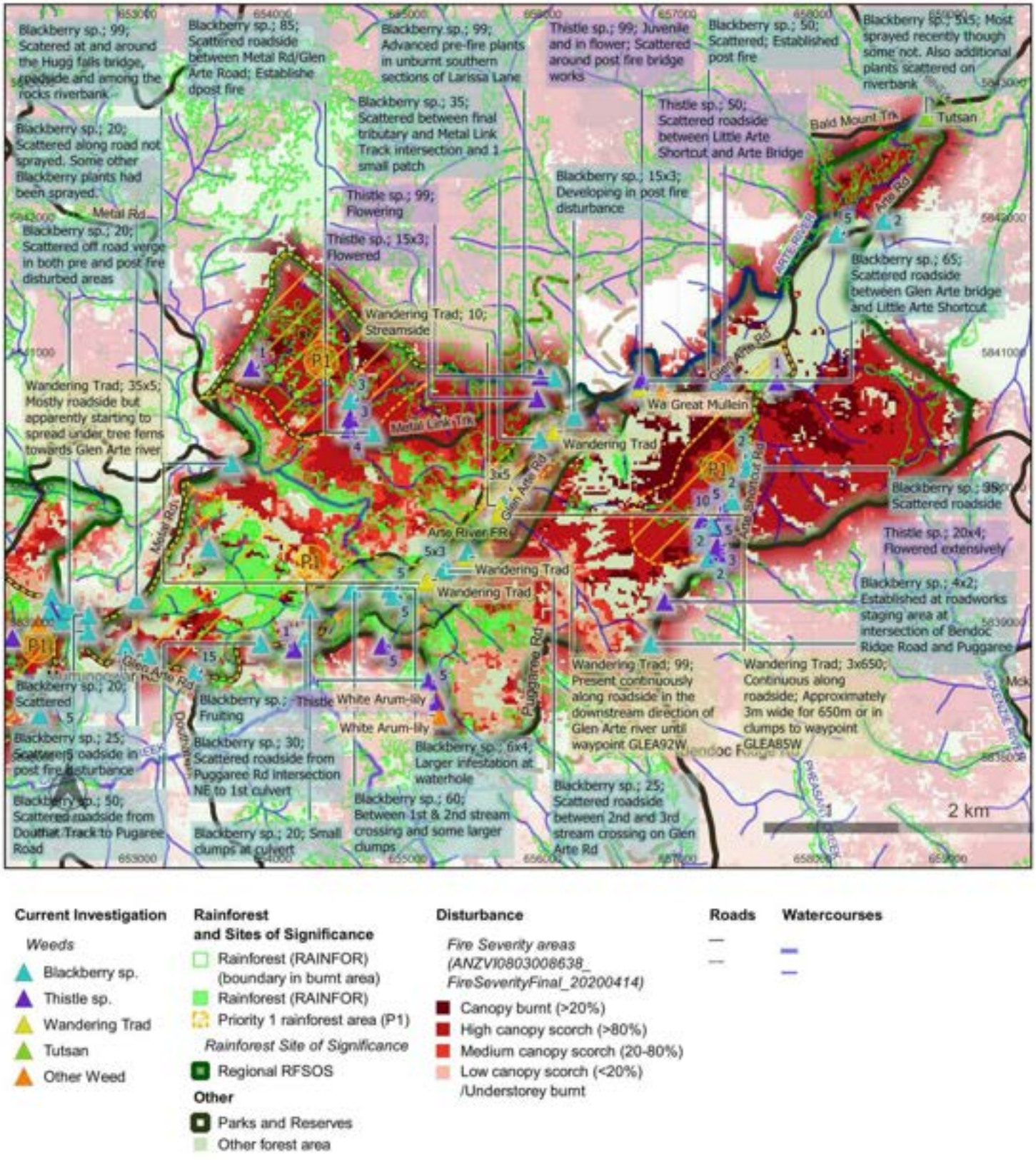
Whilst a single Wandering Trad plant was found near the Glen Arte Road bridge over the Glen Arte River a large infestation was found mostly upstream in the western half of the southwestern/central P1 area, along and between Glen Arte Road and the Glen Arte River. This infestation is largely an approximately 500×3 m strip along the rainforest/stream side of the roadside but at various points is beginning to extend further in to the rainforest, under and on Soft Tree-ferns. Given the mostly roadside nature of the Wandering Trad at this point in time it appears that it may be still a manageable/containable infestation, if acted upon quickly, compared to other infestations of the species known from other locations, including the Combienbar River RFSOS assessed within this project.

Figure 69: GLEA92W_Wandering Trad_~3x650_Continuous along roadside

Figure 70: GLEA92W_Wandering Trad_~3x650_Continuous along roadside

6.2.2 Map of weed species recorded

Glen Arte (EG70) Regional Rainforest Site of Significance



Current Investigation

Weeds

- Blackberry sp.
- Thistle sp.
- Wandering Trad
- Tutsan
- Other Weed

Rainforest and Sites of Significance

- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance

- Regional RFSOS

Other

- Parks and Reserves
- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)

- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

Roads

Watercourses

6.3 Deer (Glen Arte)

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

Deer sign, including tracks, browsing and rubbing were recorded at 13 locations throughout the Glen Arte RFSOS assessment. Most significantly this included observations of browsing on Blackwood and Muttonwood and deer rubbing on Lilly Pilly, Djelwuck, Black Oliveberry, Gippsland Waratah, Southern Sassafrass and even on the single rare and threatened Pinkwood found near the Glen Arte River.

Figure 71: GLEA90D_Rub on Pinkwood; Fresh tracks

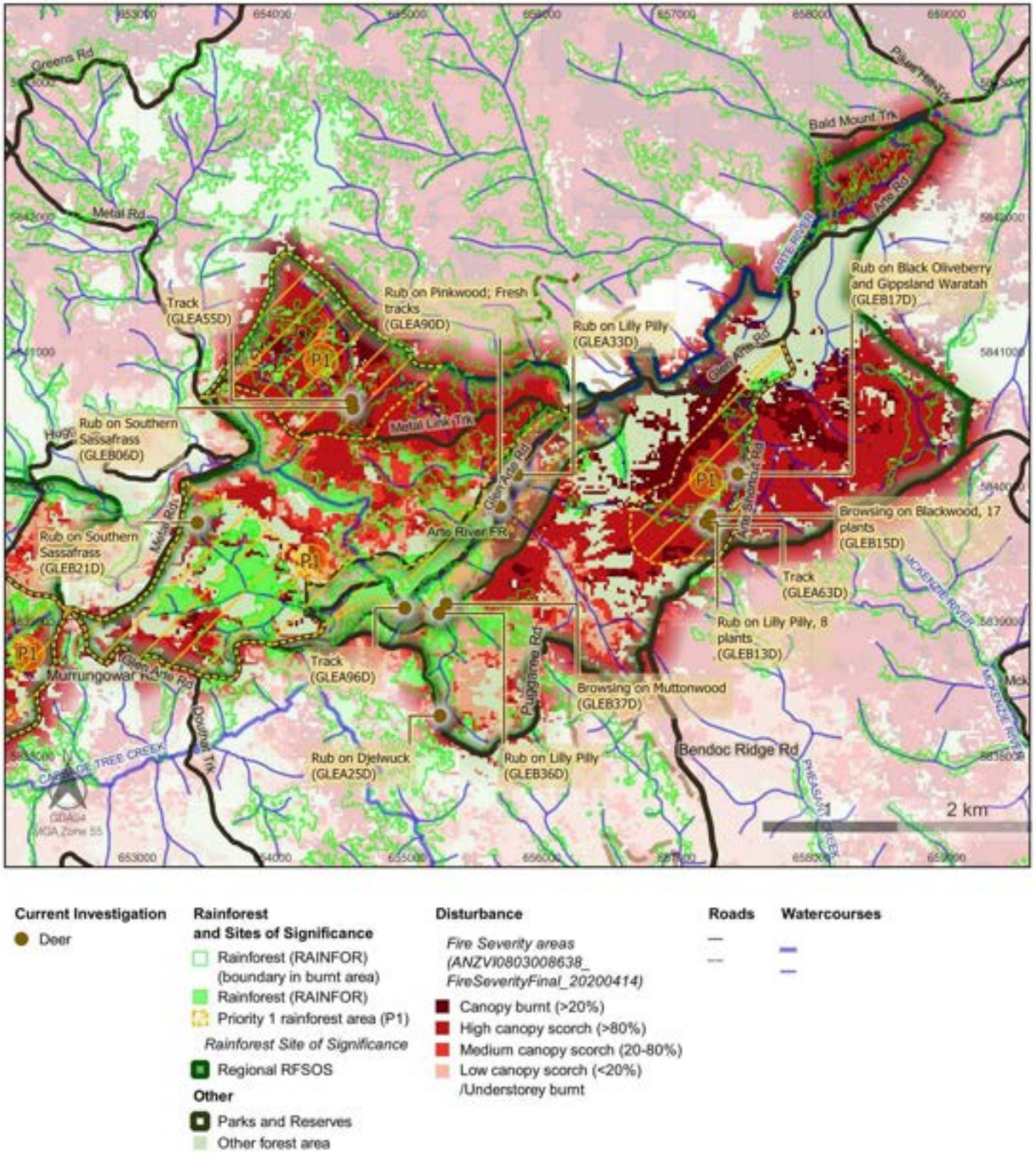
Figure 72: GLEA90D_Rub on Pinkwood; Fresh tracks

Figure 73: GLEB06D_Rub on Southern Sassafrass

Figure 74: GLEB13D_Rub on Lilly Pilly, 8 plants

6.3.2 Map of deer sign encountered

Glen Arte (EG70) Regional Rainforest Site of Significance



Current Investigation
- Deer

Rainforest and Sites of Significance
- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance
- Regional RFSOS

Other
- Parks and Reserves
- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)
- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

Roads

Watercourses

6.4 Rare or threatened flora and other significant findings (Glen Arte)

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

Throughout the Glen Arte RFSOS assessment a total of seven "Victorian Rare or Threatened" (VROT) flora species were recorded. These were:

Common Name	Scientific Name	Victorian Advisory List	FFGA	Provisional Victorian assessment
Slender/Skirted tree fern	Cyathea cunninghamii/C. x *marcescens*	Vulnerable	Listed	Critically Endangered
Small Forkfern	Tmesipteris parva	Rare		Critically Endangered
Jungle Bristle-fern	Abrodictyum caudatum	Rare		Endangered
Pinkwood	Beyeria lanceolata	Rare		Endangered
River Hook-sedge	Carex nemoralis	Rare		Endangered
Bristly Shield-fern	Lastreopsis hispida	Rare		Endangered
Hybrid Pittosporum	Pittosporum bicolor × undulatum	Rare		Least concern

Figure 75: GLEA54F_River Hook-sedge_1

Figure 76: GLEA73F_Small Forkfern

Figure 77: GLEA72F_Jungle Bristle-fern

Figure 78: GLEB35F_Hybrid Pittosporum_2

Figure 79: GLEB38b_SlenderSkirted tree fern

In 2015 the Bristly Shield-fern was discovered in East Gippsland for the first time, in the Kuark forest area nearby (~10km NE).[11] Since that discovery, the Bristly Shield-fern was subsequently discovered in another nearby rainforest area about 5 km south east of this Glen Arte discovery.[12] A further discovery was made during the Dyer Creek RFSOS assessment of this project and is further discussed within the RFSOS Condition Assessment Statement for that site.

The two very close locations of Bristly Shield-fern recorded in the northern P1 area are both within a very small patch of rainforest that had some small elements survive unburnt, including small numbers of rainforest canopy species and very small patches of understorey. These small patches are otherwise surrounded by mostly high severity fire in both sclerophyll and rainforest areas.

Figure 80: GLEB05F_Bristly Shield-fern_5

Figure 81: GLEB05F_Bristly Shield-fern_5

Figure 82: GLEB06F_Bristly Shield-fern_10

Figure 83: GLEB05F_Bristly Shield-fern_5

Figure 84: GLEB06F_Bristly Shield-fern_10

11 Fauna and Flora Research Collective, "150716 – Lastreopsis hispida et. al. detection report – Kuark_Larissa Lane – AL_FFRC_65e", https://faunaandfloraresearchcollective.wordpress.com/the-species/warm-temperate-rainforest/, accessed 1 May 2021

12 Goongerah Environment Centre, Slender and Skirted Tree-ferns and Bristly shield fern, coupes 832-502-0010, 832-502-0011 & 832-502-0019, https://www.geco.org.au/reports, accessed 1 May 2021

Along the Arte river, within the Arte River Flora Reserve, a single Pinkwood was found at the margin between rainforest and sclerophyll forest at a point where understorey fire in the sclerophyll forest stopped right near the base of the Pinkwood. The plant had been extensively rubbed by deer and recent tracks were observed nearby.

Figure 85: GLEA89F_Pinkwood_1_At edge of sclerophyll forest understorey fire and rainforest edge

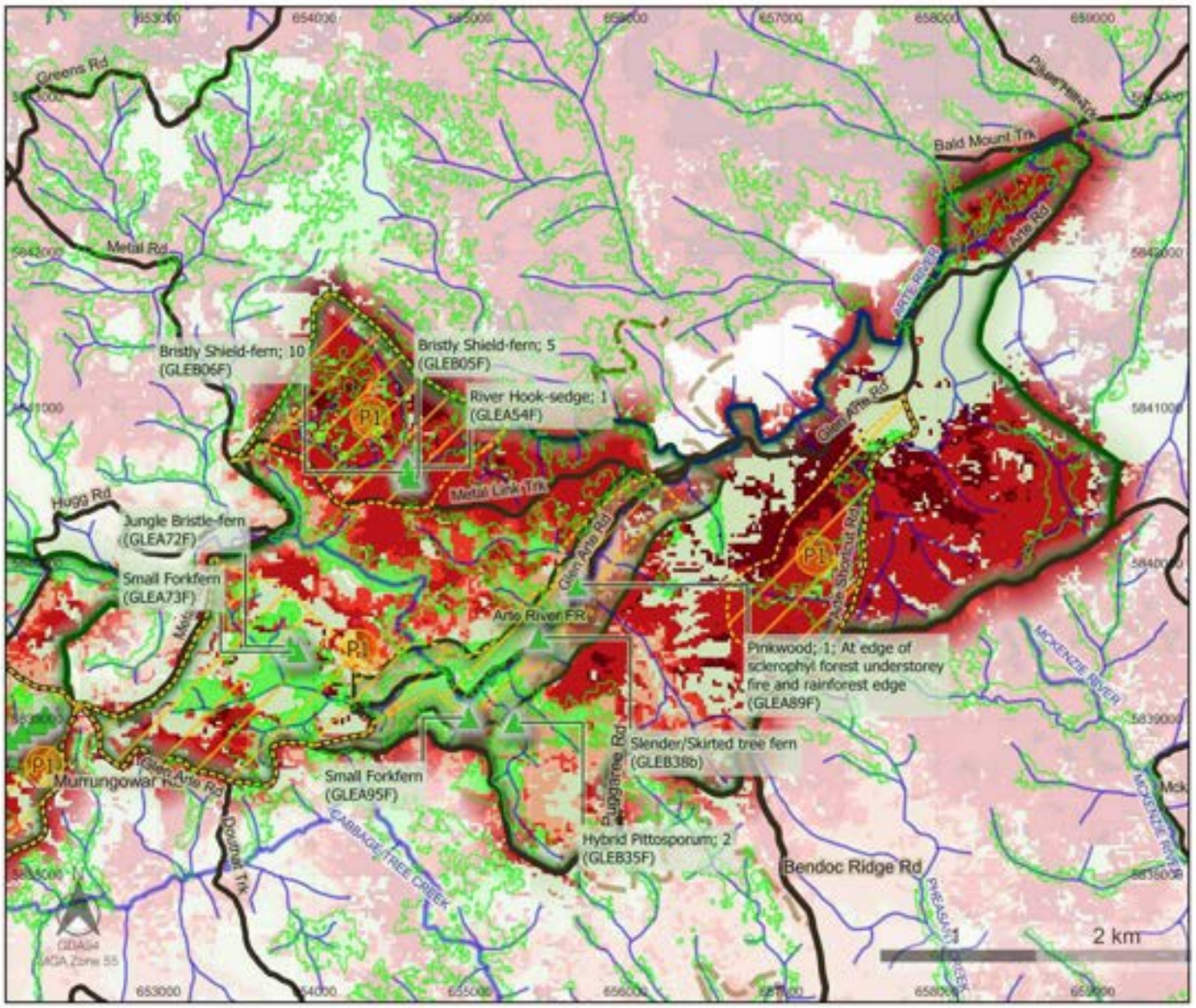
Figure 86: GLEA89F_Pinkwood_1_At edge of sclerophyll forest understorey fire and rainforest edge

Figure 87: GLEA89F_Pinkwood_1_At edge of sclerophyll forest understorey fire and rainforest edge

Figure 88: GLEA89F_Pinkwood_1_Deer rubbed

6.4.2 Map of rare or threatened flora and other significant findings

Glen Arte (EG70) Regional Rainforest Site of Significance



Current Investigation
- Flora

Rainforest and Sites of Significance
- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance
- Regional RFSOS

Other
- Parks and Reserves
- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)
- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

Roads

Watercourses

7 Sydd Creek (RFSOS Site: EG88) Condition Assessment Statement

7.1 Rainforest Site of Significance summary (Sydd Creek)

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

The 165 hectare Sydd Creek "Regional" RFSOS contains 27 hectares of mapped rainforest, all of which is mapped as Warm Temperate Rainforest (RAINFOR spatial dataset).

The 2019-2020 summer fires affected 61% (101 ha) of the RFSOS and 62% (17 ha) of the rainforest within the RFSOS, with 46% (12 ha) of the rainforest impacted by higher severity fire (medium canopy scorch and canopy burnt), 16% (4 ha) by lower severity fire (low canopy scorch but understorey burnt) and 38% (10 ha) remaining unburnt (RAINFOR & FIRE_SEV spatial datasets).

The RFSOS is entirely within the mapped area of both a 1968 and a 2004 bushfire and around 40 ha is within the mapped extent of a 1939 bushfire. Almost the whole RFSOS is within the mapped extent of fuel reduction burns in 1987 and 1994 (FIRE_HISTORY spatial datasets).

Approximately 30 hectares (18%) of the RFSOS has been subject to high intensity logging in the past such as from "Clearfelling" and "Seed Tree" logging, all since 1990. However, other lower intensity and unrecorded logging is present in further areas of the RFSOS, as mapped in the relevant spatial data and seen in the field. All of this logging was recorded within the "Priority 1" area of the RFSOS as the entire site is a Priority 1 area (LOGSEASON spatial dataset). An approximately 40 hectare planned logging coupe covers approximately 38 ha of the RFSOS and overlaps about 4 ha of the mapped rainforest (Timber_Release_Plan).

7.1.2 Roads/tracks surveyed

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

Road name	Survey status/note
Princes Hwy	Surveyed
Serpentine Rd	Surveyed
Connley Trk	Surveyed

7.1.3 P1 areas surveyed summary

The whole Sydd Creek 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 is a predominantly southern facing slope in the upper catchment of the Sydd Creek.

7.1.4 Notes and photos of rainforest and general site condition

High to moderate severity fire impacts were concentrated in the central western section of the Sydd Creek RFSOS. While the impacts of the fire in this area were lesser in some areas, where sclerophyll forest areas were burnt by high severity fire, narrow linear rainforest sections along smaller tributaries were significantly impacted, with both rainforest understories and canopies severely burnt.

Figure 89: SYDA286c_High severity fire in rainforest

Figure 90: SYDA286c_High severity fire in rainforest

However, where the sclerophyll forest fire was moderate, at the upper reaches of one tributary for instance, rainforest canopies survived and experienced only patchy understorey fire.

Figure 91: SYDA06S_Surviving rainforest canopy with partial understorey burn within moderate sclerophyll forest burn area

Amongst the high severity burnt sclerophyll forest section close to the main channel of Sydd Creek, wider sections of rainforest survived largely unburnt but were often significantly impacted at their margins. A narrow rainforest connection between two large rainforest areas along Sydd Creek was burnt through by moderate to high severity fire, breaking the rainforest canopy species connection between the two larger stands.

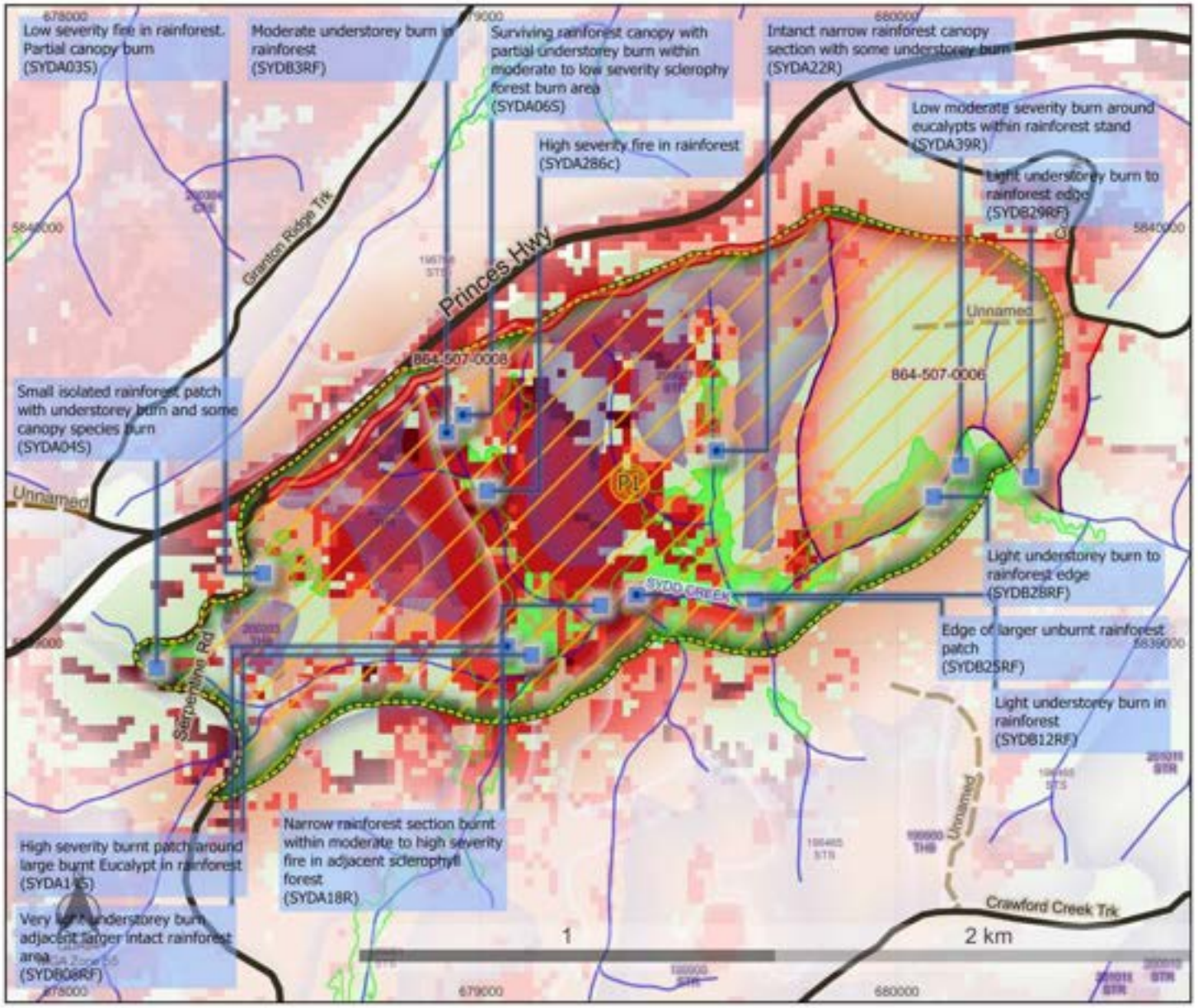
Figure 92: SYDB08RF_Very light understorey burn adjacent larger intact rainforest area

Figure 93: SYDB12RF_Light understorey burn in rainforest

A smaller patch of rainforest in the west of the RFSOS was affected by moderate to high severity fire in the sclerophyll forest surrounding it and much of it's understorey was burnt. In the eastern section of the RFSOS rainforest areas were largely unburnt with only small understorey fire incursions.

7.1.5 Map of rainforest and general site condition notes locations

Sydd Creek (EG88) Regional Rainforest Site of Significance



Current Investigation
- Photos and notes (Circled indicates photo in report/ appendix)

Rainforest and Sites of Significance
- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance
- Regional RFSOS

Other
- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)
- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

- Scheduled Logging Coupes (VicForests, December 2020)

Logging History (High Severity, LOGSEASON)
- 196061
- 196465
- 196768
- 196970
- 199091
- 201011

Roads

Watercourses

7.2 Weeds (Sydd Creek)

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

Blackberry spp. was found scattered along Serpentine Road on the western edge of the Sydd Creek RFSOS and one small patch, approximately 3×3 m was found establishing in a mound of soil at the site of post fire roadworks. Approximately 50 Thistle spp. plants were also found along the same section of Serpentine Road and then mostly only small scattered plants at the edges of burnt rainforest during the walking based assessment.

At two sites amongst/adjacent the wider rainforest sections along Sydd Creek higher severity fire had burnt at and around large eucalypts. At both locations Thistle was found in greater abundance and also most significantly Red-ink Weed was found. At each location Red-ink Weed was in fruit.

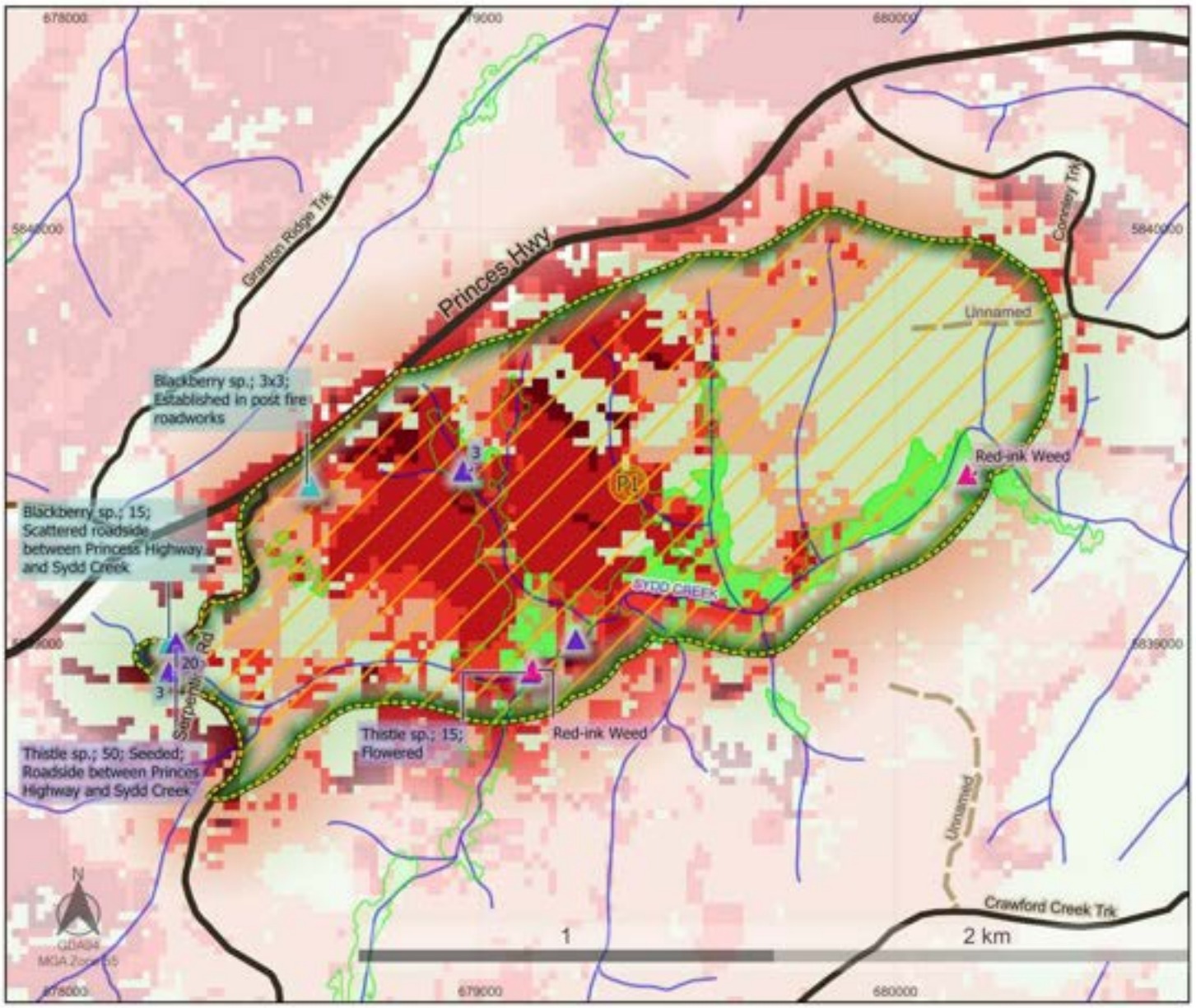
Figure 94: SYDA14S_High severity burnt patch around large burnt Eucalypt in rainforest

Figure 95: SYDA16W_Red-ink Weed_1_Seeded

Figure 96: SYDA16W_Red-ink Weed_1_Seeded

7.2.2 Map of weed species recorded

Sydd Creek (EG88) Regional Rainforest Site of Significance



Current Investigation

Weeds

- Blackberry sp.
- Thistle sp.
- Red-ink Weed

Rainforest and Sites of Significance

- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance

- Regional RFSOS

Other

- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)

- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

Roads

Watercourses

7.3 Deer (Sydd Creek)

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

The Sydd Creek RFSOS was found to have a very high deer presence. In a relatively small site 21 locations of deer sign were recorded, including sighting 3 deer in the eastern section of the RFSOS. Within and adjacent the rainforest, browsing was recorded on Muttonwood, Soft Tree-fern, Hazel Pomaderris and Victorian Christmas Bush and rubbing was recorded on Lilly Pilly, Hazel Pomaderris, Blue Oliveberry and Sweet Pittosporum. 1 wallow and two locations with recently and heavily used deer tracks were also recorded.

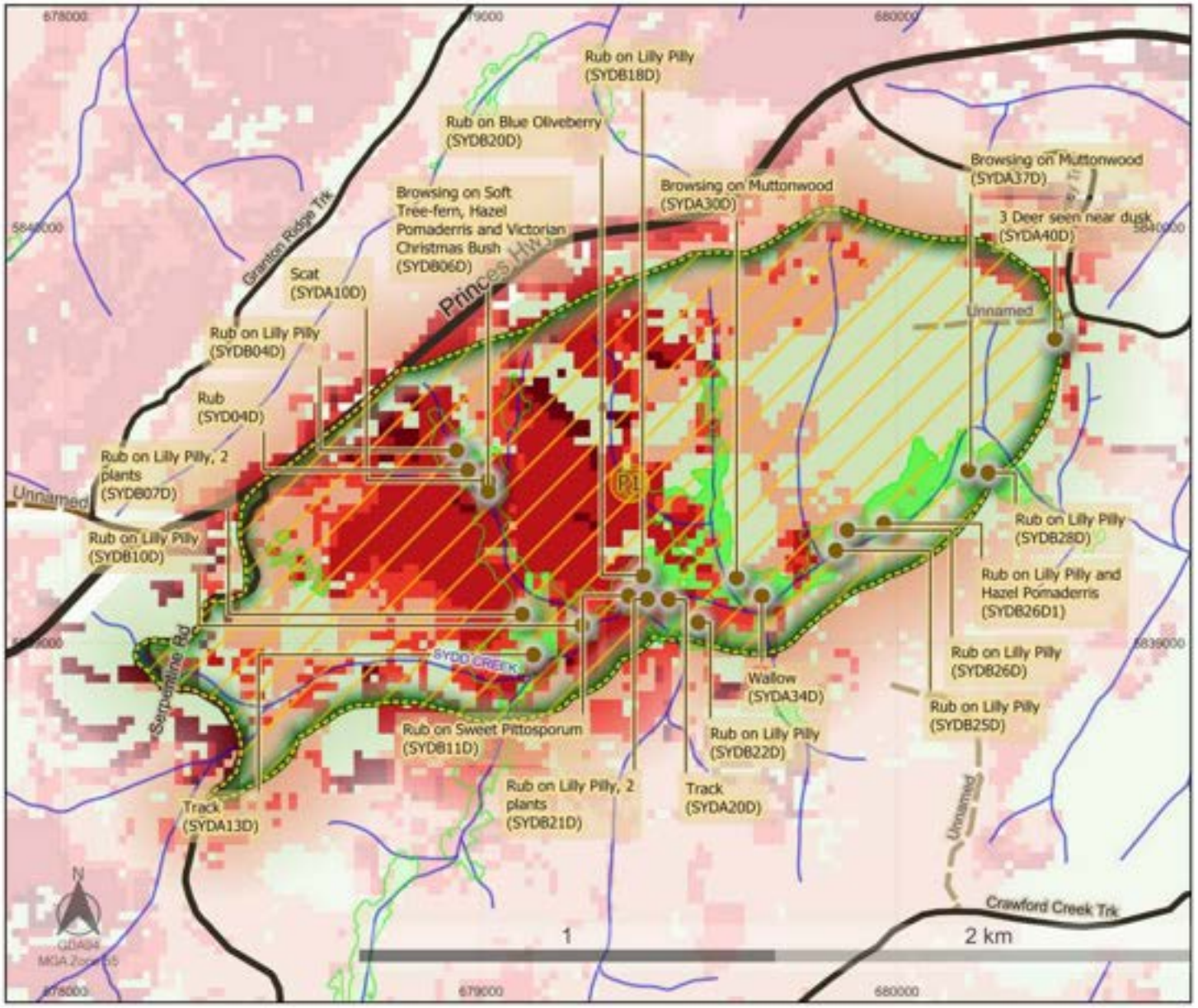
Figure 97: SYDA13D_Deer tracks through Sydd Creek

Figure 98: SYDB18D_Rub on Lilly Pilly

Figure 99: SYDB04D_Rub on Lilly Pilly

7.3.2 Map of deer sign encountered

Sydd Creek (EG88) Regional Rainforest Site of Significance



Current Investigation
- Deer

Rainforest and Sites of Significance
- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance
- Regional RFSOS

Other
- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)
- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

Roads

Watercourses

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

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

Within the Sydd Creek RFSOS two significant "Victorian Rare or Threatened" (VROT) flora species were recorded. These were:

Common Name	Scientific Name	Victorian Advisory List	FFGA	Provisional Victorian assessment
Prickly Tree-fern	Cyathea leichhardtiana	Vulnerable	Listed	Critically Endangered
Creeping Shield-fern	Lastreopsis microsora subsp. microsora	Rare		Endangered

Prickly Tree-ferns were found both within unburnt sections of the site, approximately ten plants, and in severely burnt sections, where five plants were killed by fire and two were alive but significantly damaged. Eucalypt seedlings and saplings were found establishing within the rainforest areas around the burnt and damaged Prickly Tree-ferns.

Figure 100: SYDA09F_Prickly Tree-fern_Killed by fire

Figure 101: SYDA09F_Prickly Tree-fern_Killed by fire

Figure 102: SYDA11F_Prickly Tree-fern_2_Alive but fire damaged

Figure 103: SYDA11F_Prickly Tree-fern_2_Alive but fire damaged

Figure 104: SYDA11F_Prickly Tree-fern_2_Alive but fire damaged

Figure 105: SYDB16F_Prickly Tree-fern_4

A large stand of Creeping Shield-fern, approximately 30×30 m, was found growing extensively under the canopy of a large area of unburnt rainforest along Sydd Creek.

Figure 106: SYDA33F_Creeping Shield-fern

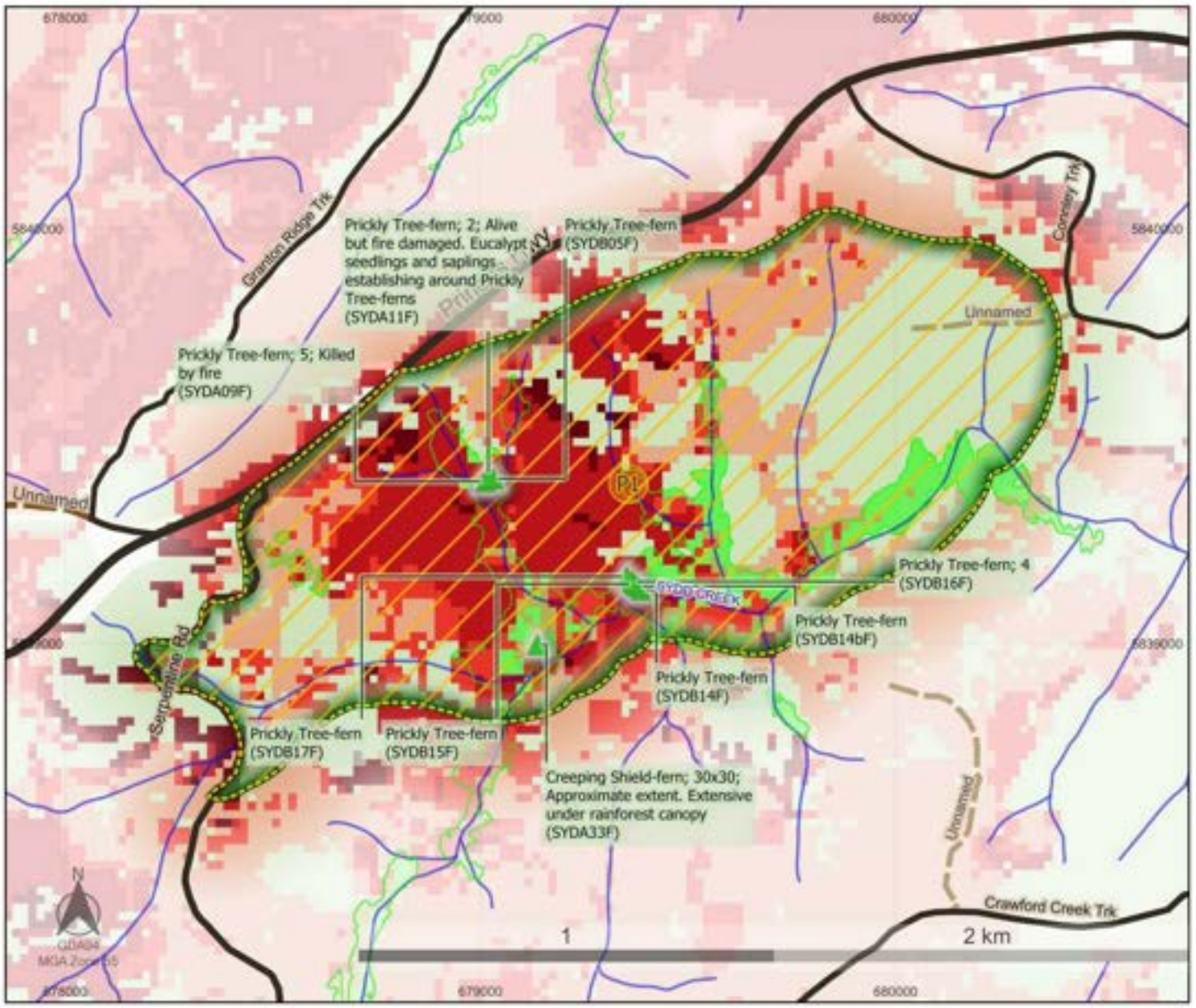
Figure 107: SYDA33F_Creeping Shield-fern

Figure 108: SYDA33F_Creeping Shield-fern

Figure 109: SYDA33F_Creeping Shield-fern

7.4.2 Map of rare or threatened flora and other significant findings

Sydd Creek (EG88) Regional Rainforest Site of Significance



Current Investigation
- Flora

Rainforest and Sites of Significance
- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance
- Regional RFSOS

Other
- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)
- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

Roads

Watercourses

8 Serpentine Creek (RFSOS Site: EG87) Condition Assessment Statement

8.1 Rainforest Site of Significance summary (Serpentine Creek)

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

The 1032 hectare Serpentine Creek "Regional" RFSOS contains 125 hectares of mapped rainforest, all of which is mapped as Warm Temperate Rainforest (RAINFOR spatial dataset).

The 2019-2020 summer fires affected 91% (935 ha) of the RFSOS and 81% (101 ha) of the rainforest within the RFSOS, with 55% (68 ha) of the rainforest impacted by higher severity fire (medium canopy scorch and canopy burnt), 26% (33 ha) by lower severity fire (low canopy scorch but understorey burnt) and 19% (24 ha) remaining unburnt (RAINFOR & FIRE_SEV spatial datasets).

The RFSOS is entirely within the mapped area of a 1939 bushfire, almost all within that of a 1959 bushfire, large areas are within a 1968 bushfire and large areas of the east downstream from the main rainforest stand are within both a 2009 fuel reduction burn and also bushfire. Around 30 ha of sclerophyll forest next to a large surviving rainforest stand is within the mapped extent of a 2010 bushfire (FIRE_HISTORY spatial datasets).

Approximately 240 hectares (23%) of the RFSOS has been subject to high intensity logging in the past such as from "Clearfelling" and "Seed Tree" logging, 199 hectares since 1990. Around 20 ha of this logging was recorded within the "Priority 1" areas of the RFSOS and evidence of unmapped older logging, such as the presence of stumps, was recorded in other parts of the P1 area, particularly around the upper reaches of the Serpentine Creek headwaters (LOGSEASON spatial dataset). Two logging coupes are planned within about 62 ha of the RFSOS and abut and overlap large areas of mapped rainforest areas (Timber_Release_Plan).

8.1.2 Roads/tracks surveyed

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

Road name	Survey status/note
Dinah Divide Track	Surveyed
Short Track	Surveyed (except for overgrown south western section)
Jack Two Track	Surveyed (except for overgrown central section)
Serpentine Creek Track	Surveyed (except for overgrown eastern half)
Serpentine Road	Surveyed

8.1.3 P1 areas surveyed summary

The Serpentine 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 422 hectares in total and contains 67 hectares of mapped rainforest (RAINFOR) in the Serpentine Creek catchment.

8.1.4 Notes and photos of rainforest and general site condition

The large Serpentine Creek RFSOS was almost completely affected by the 2019-20 summer bushfire, with over 90% of the site and 80% of the rainforest burnt. Though there were some

exceptions, within the site's P1 area, damage to rainforest was less severe in the more deeply incised gullies in the upper reaches of the Serpentine Creek catchment. Impacts within this area ranged from limited areas of light rainforest understorey fire to moderate severity fires on southern facing sclerophyll forest slopes impacting rainforest canopies at the margins. On northern facing slopes, the central sections of the P1 area, and the large flatter, riverside rainforest sections, rainforest areas were impacted by very high severity fire with total canopy scorch/burn in large areas.

Figure 110: SERB09RF_Light understorey burn in sclerophyll forest. Moderate canopy burn in upper margins of rainforest (upper catchment of Serpentine Creek catchment)

Figure 111: SERB18RF_Rainforest canopy burnt. Low rainforest and Low sclerophyll canopy species recruitment (central section of P1 area)

Figure 112: SERB26RF_Large area of rainforest canopy species burnt (large flatter, riverside rainforest sections)

At a few small locations within the main rainforest stands of the P1 area very small areas of entirely unburnt rainforest were found. This included small patches within very deeply incised gullies even where surrounding rainforest and sclerophyll forest was severely burnt. On the larger flatter areas a small number of unburnt rainforest canopy understorey patches were found supporting White Supplejack, which is rare in Victoria and "provisionally assessed" as endangered.

Figure 113: SERB16RF_Unburnt rainforest in deeply incised gully amongst high severity fire

Figure 114: SERA37R_Most rainforest canopy burnt with some limited canopy resprouting. Adjacent sclerophyll forest heavily burnt

Figure 115: SERA312c_Surviving unburnt rainforest patch. Very large Jungle Grape

Figure 116: SERB26RF_Large area of rainforest canopy species burnt

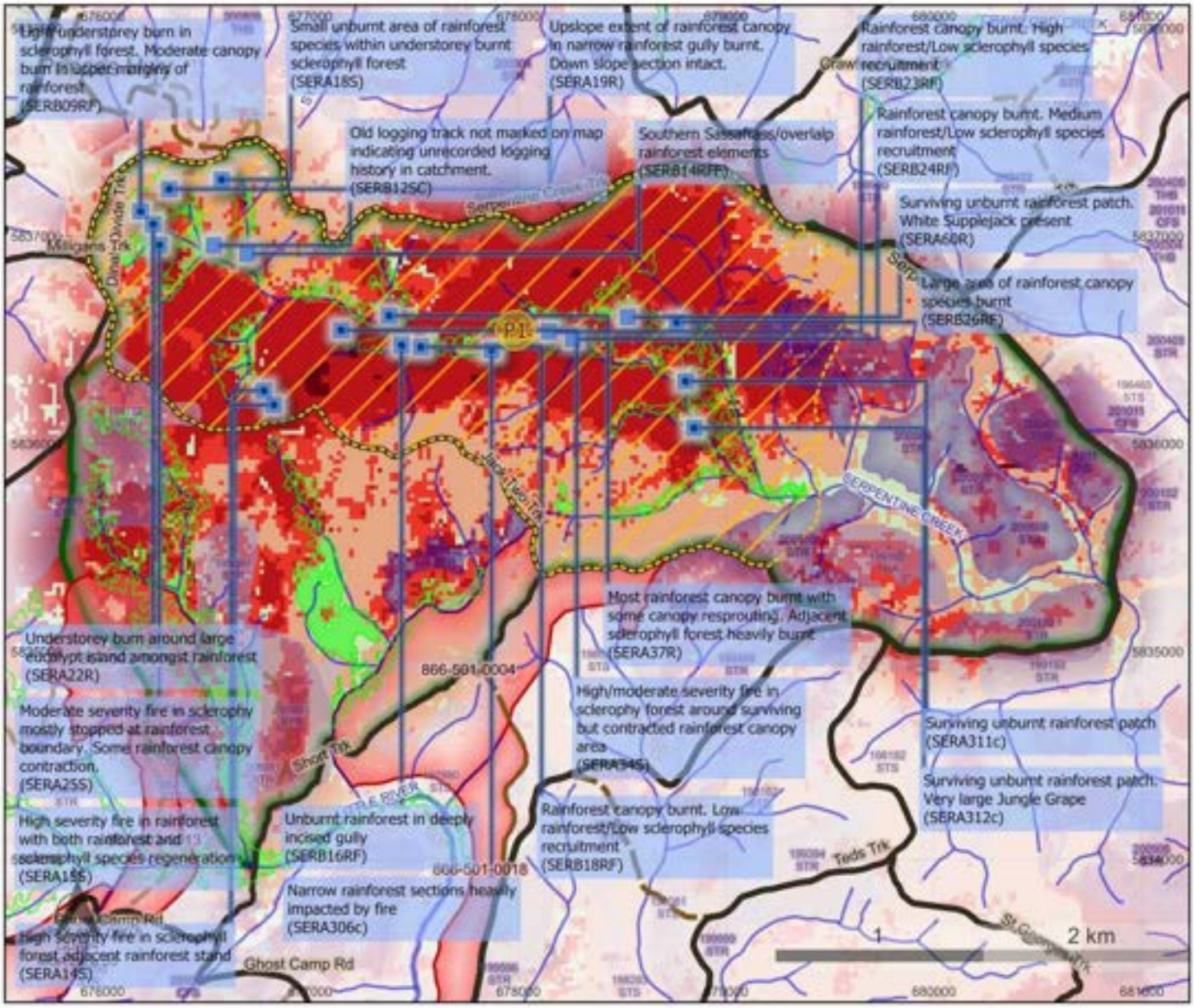
Outside of the P1 area, in the Little River catchment section of the RFSOS, a large ~12ha stand of rainforest can be seen in the rainforest and fire severity mapping to remain largely unburnt by the 2019-20 fire. Due to project time constraints, this large stand of rainforest was not assessed during this project. However, field surveyors have previously visited this stand on multiple occasions and in 2016 discovered the presence of a Prickly Tree-fern population adjacent to a scheduled logging coupe within the RFSOS.[13] Fire and rainforest mapping shows that understorey fire may have impacted the south eastern sections of the stand where the Prickly Tree-fern population is located.

13 Fauna and Flora Research Collective, "160708 – Serpentine Crk RSOS_867-502-0007 – Warm Temperate Rainforest Investigation Report – AL_FFRC-GECO_55", https://faunaandfloraresearchcollective.wordpress.com/the-species/warm-temperate-rainforest/, accessed 1 May

2021

8.1.5 Map of rainforest and general site condition notes locations

Serpentine Creek (EG87) Regional Rainforest Site of Significance



8.2 Weeds (Serpentine Creek)

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

Blackberry and Thistle were the only target weed species (see Chapter 1) recorded throughout the Serpentine Creek RFSOS. Both Blackberry and Thistle were found establishing post fire along roadsides as scattered individual plants or as clumps/patches, as well as within sclerophyll forest and rainforest areas.

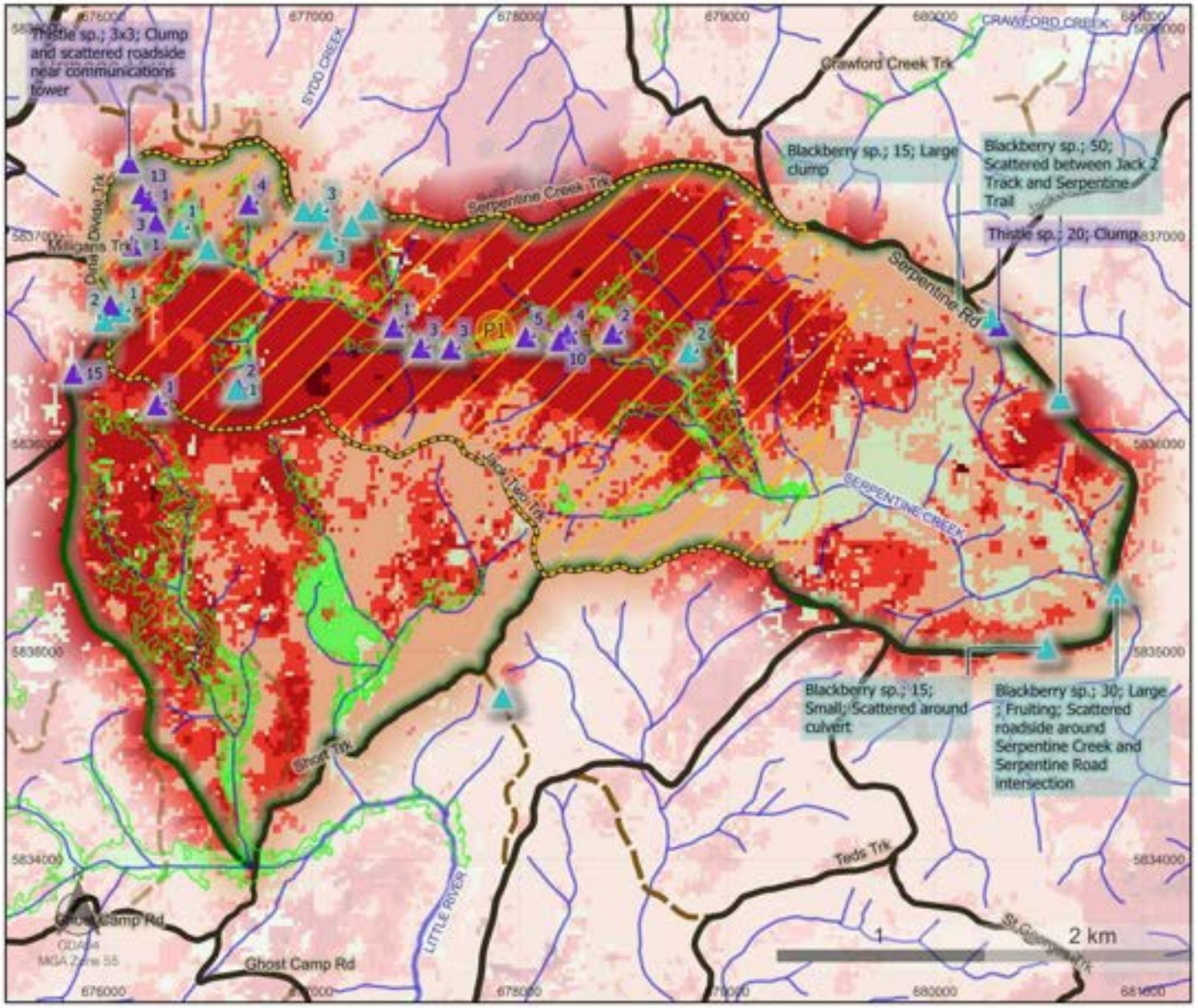
Most roads surveyed throughout the RFSOS had some Blackberry and Thistle scattered along their roadside and only a few larger clumps were found and recorded. Throughout the main rainforest stand within the P1 area of the RFSOS only isolated, mostly only juvenile or smaller Blackberry plants establishing post fire, were recorded. Thistle plants, usually at the edge of or within a gap in a rainforest area, were found ranging from juvenile to flowering plants.

Whilst not listed as target weeds for this project introduced Fleabane species (*Erigeron spp.*) and Black-fruit Nightshades (*Solanum spp.*) were also widespread and abundant throughout the RFSOS. See Appendix D for further discussion of these species groups. Fleabane was present in most settings within the RFSOS, from roadsides to small areas of disturbance at the edge of understorey burnt rainforest for example. Black-fruit Nightshades were also extensive and found in many settings, often abundantly within and around fire damaged rainforest areas (including where the rainforest was impacted only by understorey fire). Locations and photos of Fleabane and Black-fruit Nightshades were generally not recorded throughout this project.

Figure 117: SERA51W_Thistle sp._10_Growing next to a very large Kanooka burnt in the 2019_20 fire

8.2.2 Map of weed species recorded

Serpentine Creek (EG87) Regional Rainforest Site of Significance



Current Investigation

Weeds

- Blackberry sp.
- Thistle sp.

Rainforest and Sites of Significance

- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance

- Regional RFSOS

Other

- Parks and Reserves
- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)

- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

Roads

Watercourses

8.3 Deer (Serpentine Creek)

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

The Serpentine Creek RFSOS was found to have a high deer presence. Twelve locations of deer sign were recorded, including three wallows. Within and adjacent the rainforest, browsing was recorded on Muttonwood, Black Oliveberry, Staff Climber and the rare and threatened White Supplejack. Deer rubbing was recorded on Lilly Pilly (eleven plants) and Kanooka (two plants).

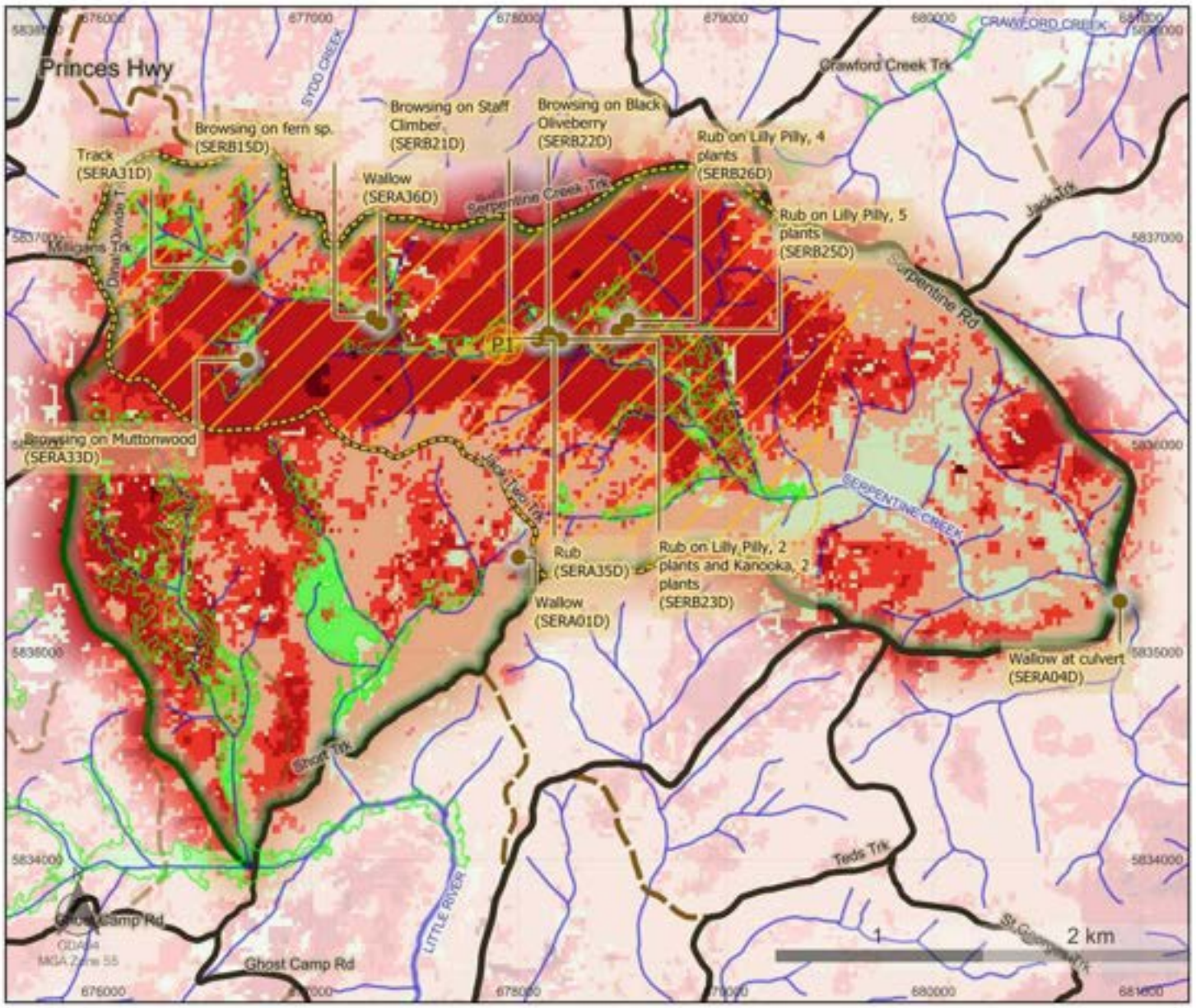
Figure 118: SERB23D_Rub on Lilly Pilly, 2 plants and Kanooka, 2 plants

Figure 119: SERA33D_Browsing on Mutton-wood

Figure 120: SERA01D_Wallow

8.3.2 Map of deer sign encountered

Serpentine Creek (EG87) Regional Rainforest Site of Significance



Current Investigation
- Deer

Rainforest and Sites of Significance
- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance
- Regional RFSOS

Other
- Parks and Reserves
- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)
- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

Roads

Watercourses

8.4 Rare or threatened flora and other significant findings (Serpentine Creek)

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

Within the Sydd Creek RFSOS a significant "Victorian Rare or Threatened" (VROT) flora species was recorded. This was:

Common Name	Scientific Name	Victorian Advisory List	FFGA	Provisional Victorian assessment
White Supplejack	Ripogonum album	Rare		Endangered

White Supplejack was found at two very small unburnt locations within the otherwise heavily burnt broad rainforest areas in the flatter sections of the Serpentine Creek RFSOS P1 area. At one location White Supplejack was observed browsed by deer.

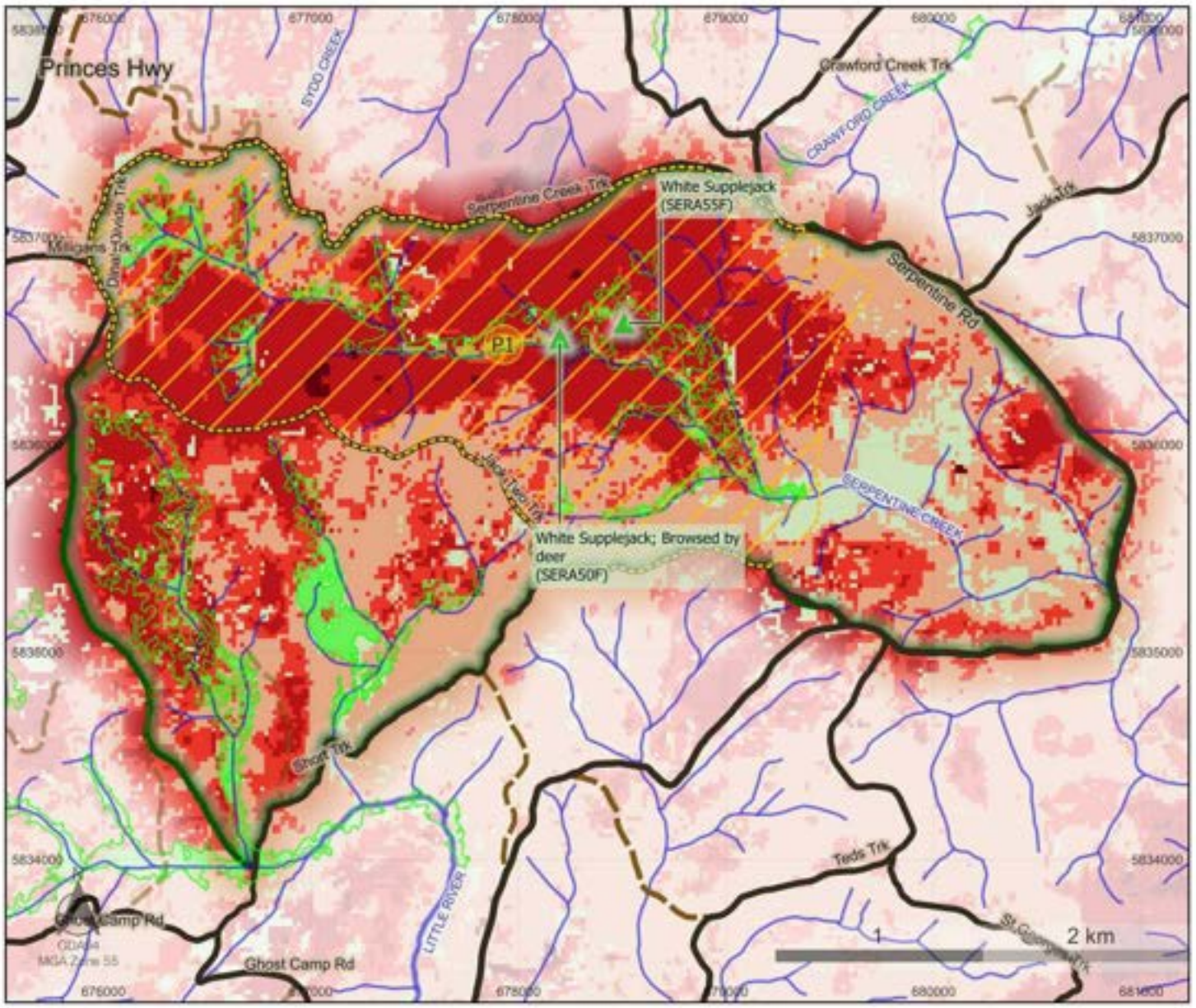
Figure 121: SERA50F_White Supplejack_Appears browsed by deer

Figure 122: SERA50F_White Supplejack

Figure 123: SERA50F_White Supplejack_Browsed

8.4.2 Map of rare or threatened flora and other significant findings

Serpentine Creek (EG87) Regional Rainforest Site of Significance



9 Brown Creek (Future Trail) (RFSOS Site: EG101) Condition Assessment Statement

9.1 Rainforest Site of Significance summary (Brown Creek (Future Trail))

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

The 293 hectare Brown Creek (Future Trail) "Regional" RFSOS contains 10 hectares of mapped rainforest, all of which is mapped as Warm Temperate Rainforest (RAINFOR spatial dataset).

The 2019-2020 summer fires affected 89% (260 ha) of the RFSOS and 66% (7 ha) of the rainforest within the RFSOS, with 10% (1 ha) of the rainforest impacted by higher severity fire (medium canopy scorch and canopy burnt), 56% (6 ha) by lower severity fire (low canopy scorch but understorey burnt) and 34% (3 ha) remaining unburnt (RAINFOR & FIRE_SEV spatial datasets).

The RFSOS is entirely within the mapped areas of bushfires in 1968 and 1983. "Fuel Reduction Burning" is recorded over approximately 50 hectares of the site, though these areas are instead likely "post logging burns" as each of the fire boundaries follow recorded logging history boundaries (FIRE_HISTORY and LOGSEASON spatial datasets).

Approximately 122 hectares (42%) of the RFSOS has been subject to high intensity logging in the past such as from "Clearfelling" and "Seed Tree" logging 27 hectares since 1990. Approximately 15 ha of high intensity logging is mapped within the "Priority 1" area of the RFSOS (LOGSEASON spatial dataset). Approximately 15 ha of the RFSOS is scheduled to be logged and this area was observed to be demarcated in the field in preparation for logging (Timber_Release_Plan). Bulldozing adjacent to this logging coupe along Drummer Track had recently been completed.

9.1.2 Roads/tracks surveyed

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

Road name	Survey status/note
Farm Track	Surveyed
Future Track	Surveyed
Drummer Track	Surveyed

9.1.3 P1 areas surveyed summary

The Brown Creek (Future Trail) 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 72 hectares in total, is approximately a 150 m buffer extending either side of Brown Creek within the RFSOS, and contains 8 hectares of mapped rainforest (RAINFOR).

9.1.4 Notes and photos of rainforest and general site condition

Whilst about 90% of the Brown Creek (Future Trail) RFSOS was impacted by the 2019-20 bushfire, the most severely burnt areas were largely restricted to younger forest areas recorded as intensively logged in the past 30-40 years. The largely narrow linear rainforest stands along Brown Creek were mostly subject to understorey fire and rainforest canopy species burn around their

edges. Evidence of earlier fire was noted on large Kanookas that were not burnt in the 2019-20 fire but contained large fire scars. In addition, emergent eucalypts, in the order of 50 years of age, within parts of the rainforest suggested prior disturbance and contraction of the rainforest stand in sections where it is now fragmented and interspersed with more sclerophyll forest species.

Figure 124: BROA07R_Upstream extent of narrow rain-forest stand with understorey burn/canopy mostly intact

Figure 125: BROA07R_Upstream extent of narrow rain-forest stand with understorey burn/canopy mostly intact

Figure 126: BROA10R_Evidence of older pre 2019-20 fire affecting rainforest stand

The largest and widest expanse of mapped rainforest within the RFSOS, about 5 ha adjacent Brown Creek, was largely unaffected at it's central point, with no understorey fire, but some edges of the stand had rainforest canopy species burnt to a small degree. Around the entirety of the stand the rainforest-sclerophyll forest ecotone was mostly burnt, largely with understorey fire but with some areas of moderate severity fire, including burnt rainforest and sclerophyll forest species canopies.

Figure 127: BROA16S_Ecotone burnt at edge of main RFSOS rainforest stand

Figure 128: BROA20R_Ecotone burnt at edge of main RFSOS rainforest stand (edge of largest stand of rainforest in RFSOS)

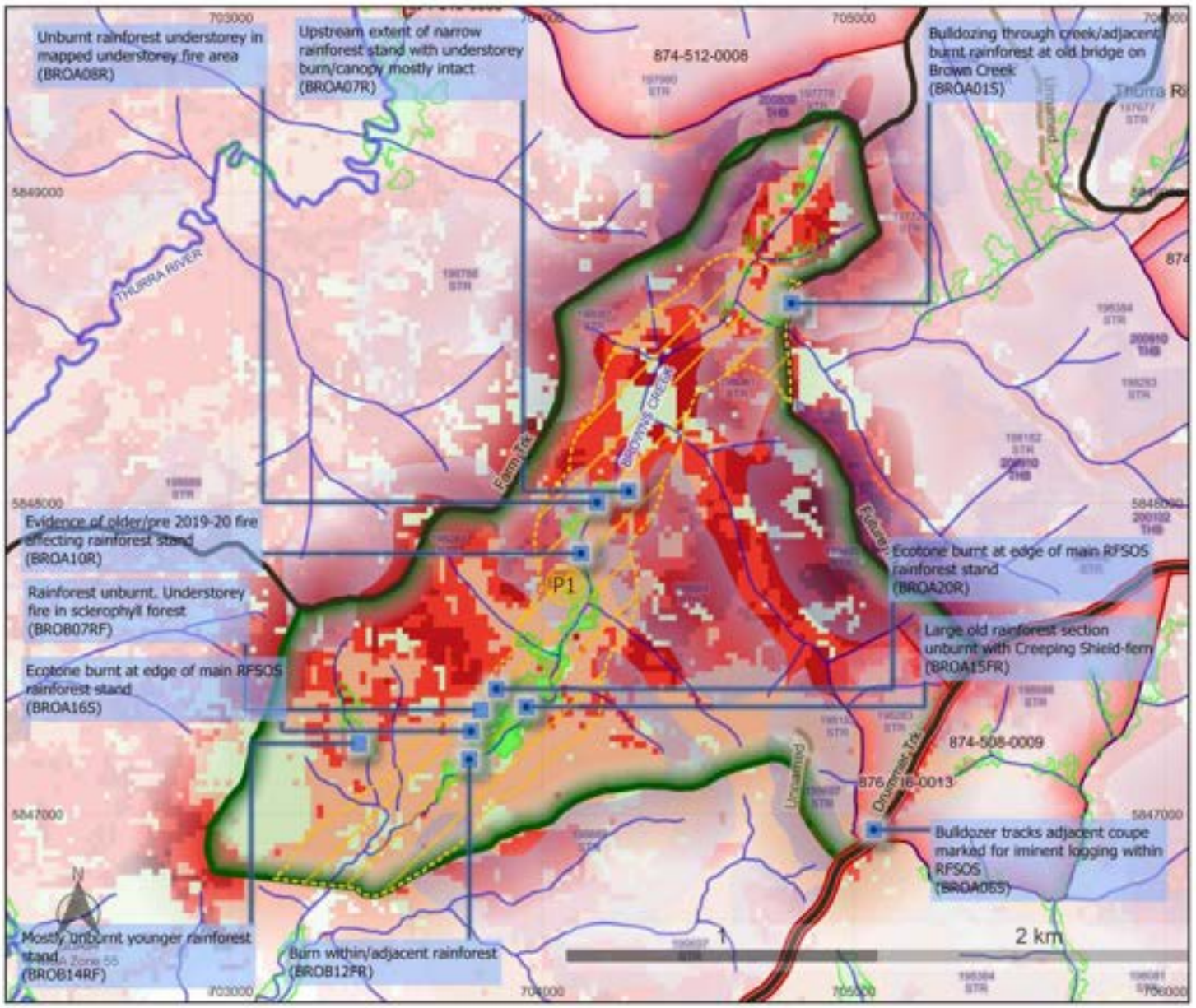
Figure 129: BROB12FR_Burn within/adjacent rainforest

Figure 130: BROA15FR_Large old rainforest section unburnt with Creeping Shield-fern_50x50

Figure 131: BROB07RF_Rainforest unburnt. Understorey fire in adjacent sclerophyll forest

9.1.5 Map of rainforest and general site condition notes locations

Brown Creek (Future Trail) (EG101) Regional Rainforest Site of Significance



9.2 Weeds (Brown Creek (Future Trail))

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

Blackberry and Thistle were the only target weed species (see Chapter 1) recorded throughout the Brown Creek (Future Trail) RFSOS. Both Blackberry and Thistle were found establishing post fire along roadsides as scattered individual plants or as clumps/patches, and Thistle was also found within sclerophyll forest and rainforest areas.

Future Track and especially Drummer Track both had Blackberry scattered along their roadside establishing in recent post fire roadworks. Thistle plants, usually at the edge of or within a gap in a rainforest area, were found ranging from juvenile to flowering plants.

Whilst not listed as target weeds for this project introduced Fleabane species (*Erigeron spp.*) and Black-fruit Nightshades (*Solanum spp.*) were also found throughout the RFSOS. See Appendix D for further discussion of these species groups. Locations and photos of Fleabane and Black-fruit Nightshades were generally not recorded throughout this project.

Figure 132: BROA03W_Fleabane sp. At burnt bridge over Brown Creek

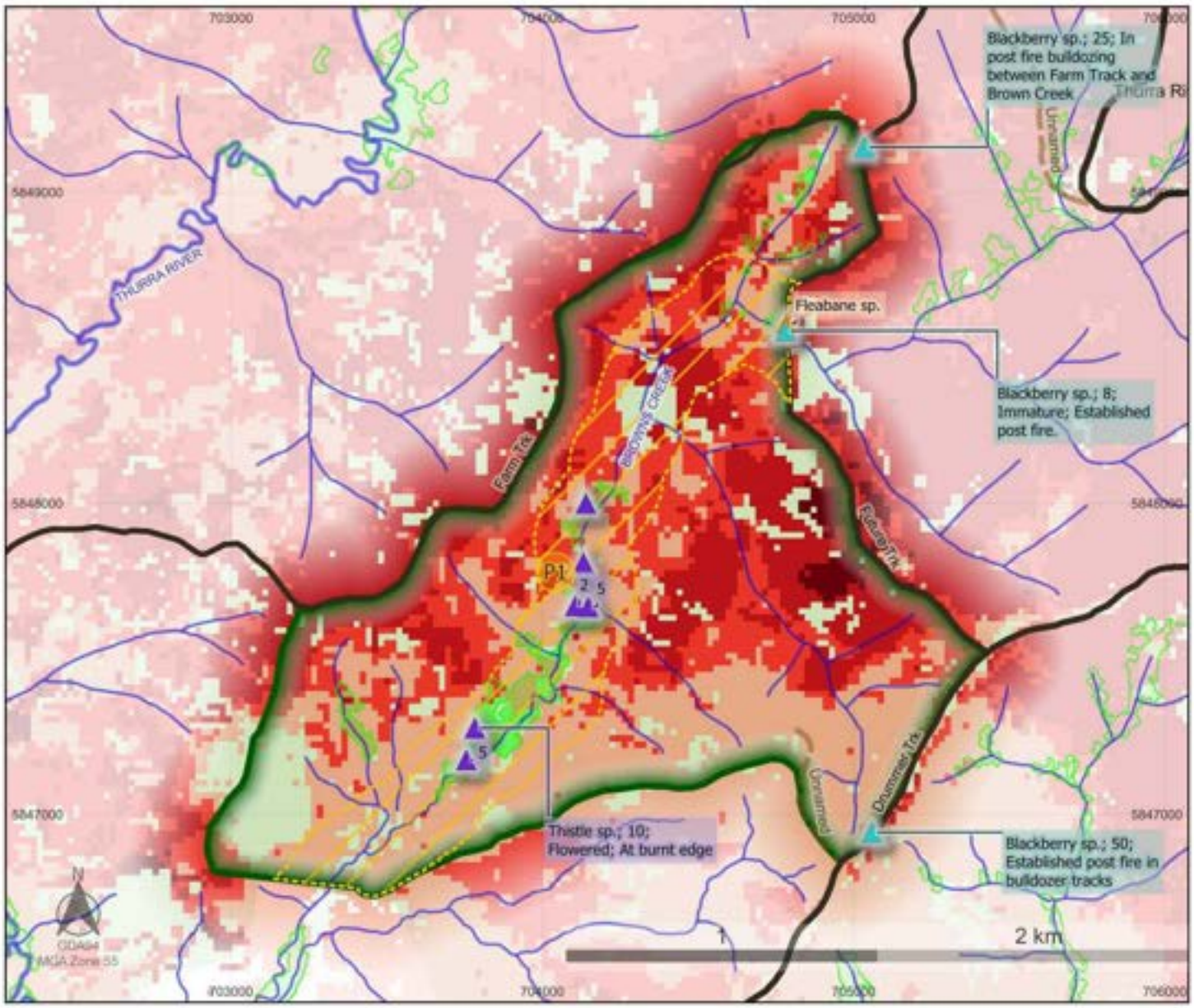
Figure 133: BROA05W_Blackberry sp._50_Established post fire in bulldozer tracks

Figure 134: BROB01W_Thistle sp.

Figure 135: BROB04W_Thistle sp._2_Seeding (and Black-fruit Nightshades (Solanum spp.)

9.2.2 Map of weed species recorded

Brown Creek (Future Trail) (EG101) Regional Rainforest Site of Significance



Current Investigation

Weeds

- Blackberry sp.
- Thistle sp.
- Other Weed

Rainforest and Sites of Significance

- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance

- Regional RFSOS

Other

- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)

- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

Roads

Watercourses

9.3 Deer (Brown Creek (Future Trail))

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

The Brown Creek (Future Trail) RFSOS was found to have a high deer presence. Thirteen locations of deer sign were recorded, including two wallows. Within and adjacent the rainforest, browsing was recorded on Sweet Sarsaparilla and Soft Tree-fern and deer rubbing was recorded on Lilly Pilly, Djelwuck and Hazel Pomaderris.

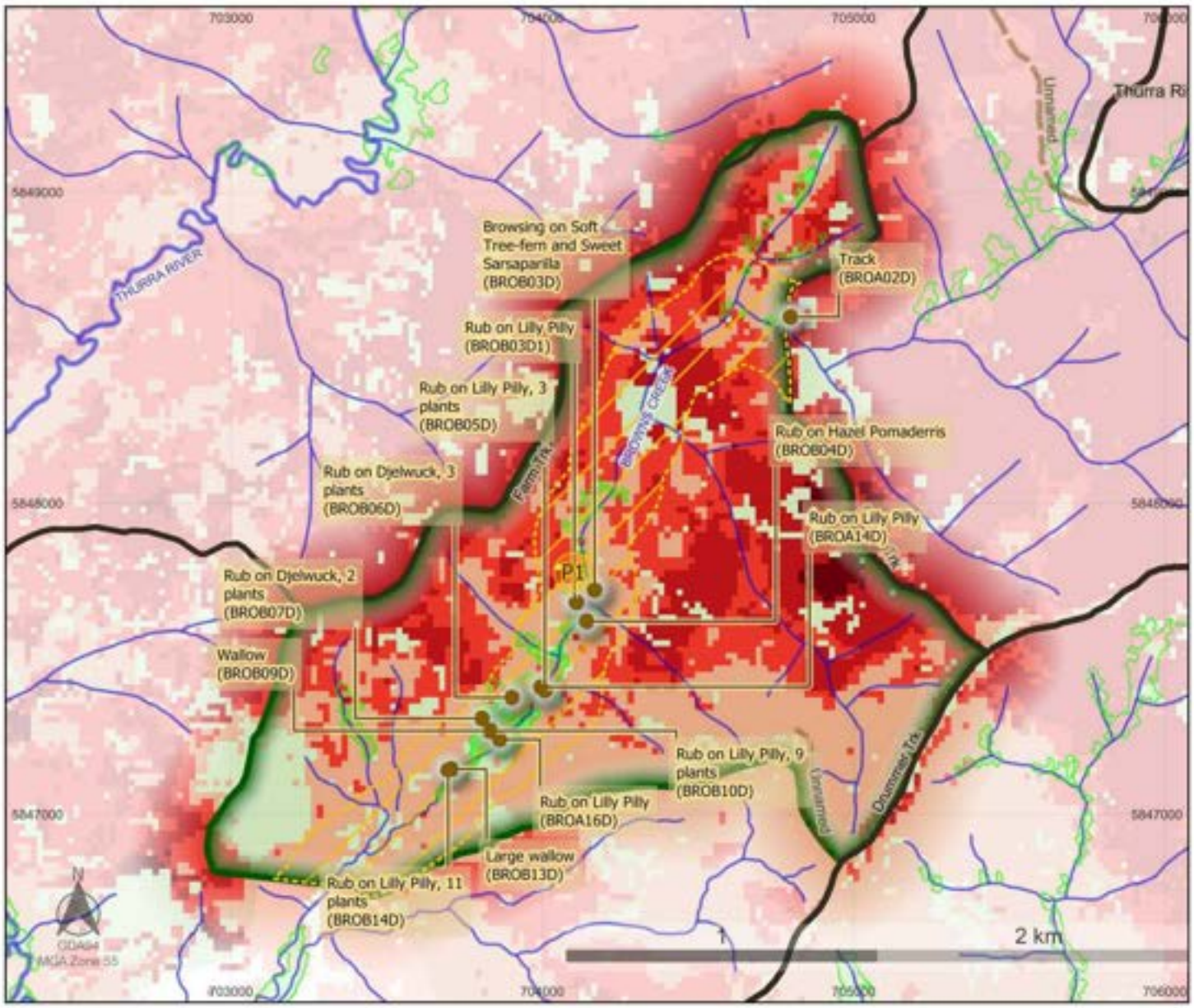
Figure 136: BROB03D1_Rub on Lilly Pilly

Figure 137: BROA02D_Deer tracks in post-fire bulldozer tracks through Brown Creek

Figure 138: BROB13D_Large wallow site

9.3.2 Map of deer sign encountered

Brown Creek (Future Trail) (EG101) Regional Rainforest Site of Significance



Current Investigation
- Deer

Rainforest and Sites of Significance
- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance
- Regional RFSOS

Other
- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)
- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

Roads

Watercourses

9.4 Rare or threatened flora and other significant findings (Brown Creek (Future Trail))

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

Within the Sydd Creek RFSOS a significant "Victorian Rare or Threatened" (VROT) flora species was recorded. This was:

Common Name	Scientific Name	Victorian Advisory List	FFGA	Provisional Victorian assessment
Creeping Shield-fern	Lastreopsis microsora subsp. microsora	Rare		Endangered

At the centre of the widest area of rainforest remaining largely unburnt from the 2019-20 bushfire a large stand of rare and threatened Creeping Shield-fern was found.

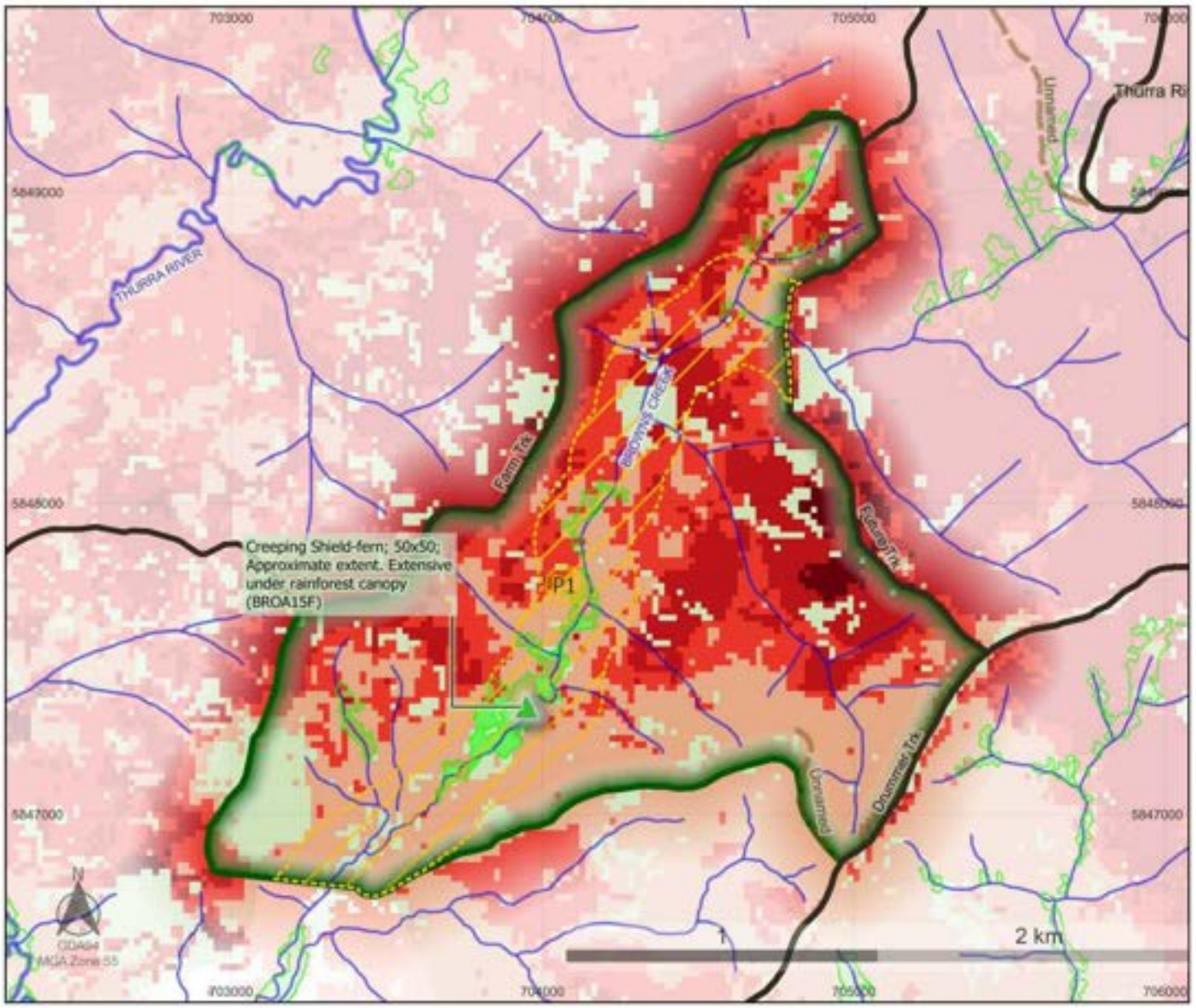
Figure 139: BROA15F_Creeping Shield-fern_50x50_Approximate extent. Extensive under rainforest canopy

Figure 140: BROA15F_Creeping Shield-fern_50x50_Approximate extent. Extensive under rainforest canopy

Figure 141: BROA15F_Creeping Shield-fern_50x50_Approximate extent. Extensive under rainforest canopy

9.4.2 Map of rare or threatened flora and other significant findings

Brown Creek (Future Trail) (EG101) Regional Rainforest Site of Significance



Current Investigation
- Flora

Rainforest and Sites of Significance
- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance
- Regional RFSOS

Other
- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)
- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

Roads

Watercourses

10 Log Bridge Creek (RFSOS Site: EG96) Condition Assessment Statement

10.1 Rainforest Site of Significance summary (Log Bridge Creek)

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

The 1008 hectare Log Bridge Creek "Regional" RFSOS contains 39 hectares of mapped rainforest, all of which is mapped as Warm Temperate Rainforest (RAINFOR spatial dataset).

The 2019-2020 summer fires affected 89% (900 ha) of the RFSOS and 58% (22 ha) of the rainforest within the RFSOS, with 3% (1 ha) of the rainforest impacted by higher severity fire (medium canopy scorch and canopy burnt), 55% (21 ha) by lower severity fire (low canopy scorch but understorey burnt) and 42% (16 ha) remaining unburnt (RAINFOR & FIRE_SEV spatial datasets).

The RFSOS is entirely within the mapped areas of a 1983 bushfire and a small section of a 1968 bushfire. "Fuel Reduction Burning" from 1972, 1977 and 2007 is recorded over approximately 250 ha (total) in the north-east of the site (FIRE_HISTORY spatial dataset).

Approximately 49 hectares (5%) of the RFSOS has been subject to high intensity logging in the past such as from "Clearfelling" and "Seed Tree" logging, 27 hectares since 1990. Observations of older logging on site in areas not mapped as been logged, such as the presence of stumps, suggest larger parts of the RFSOS have been subject to logging disturbances that is not recorded in the spatial datasets (LOGSEASON spatial dataset). One logging coupe has recently been completed within the RFSOS and two additional coupes are planned within the RFSOS. Both of these coupes are adjacent to and overlap rainforest stands within the RFSOS (Timber_Release_Plan).

10.1.2 Roads/tracks surveyed

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

Road name	Survey status/note
Stockyard Road	Surveyed
Cemetery Track	Surveyed
Wombat Hill Track	Surveyed
Unnammed track on north of RFSOS	Surveyed (overgrown, walked)

10.1.3 P1 areas surveyed summary

The Log Bridge Creek RFSOS has one "Priority 1" (**P1**) area (mapped in the RFSOS100 spatial dataset) that was surveyed (in part) as part of the walking based assessment. This P1 area is 524 hectares in total and contains 38 hectares of mapped rainforest (RAINFOR) in the Log Bridge Creek catchment. Rainforest areas were only surveyed west of Wombat Hill Track, which intersects the P1 area. A smaller 3 ha patch of rainforest in the P1 area, about 1.5 km from the nearest track in the north east of the site, was not surveyed due to project time constraints.

10.1.4 Notes and photos of rainforest and general site condition

Despite the 2019-20 bushfire fire impacting around 90% of the Log Bridge Creek RFSOS only about a quarter of the area was from higher severity fire. These higher severity impacts were largely

restricted to younger sclerophyll forest slopes and did not involve large areas of canopy burn or even high canopy scorch. Rainforest areas were almost entirely within lower severity sclerophyll forest understorey fire areas. Fire and rainforest mapping of the RFSOS show significant sections of the site's rainforest as understorey burnt though some of these areas are unburnt, with fire effects in these areas generally restricted to rainforest margins. However, fire within the rainforest was observed to be more intense at numerous locations where younger eucalypts were found within the rainforest, appearing to be present as the result of previous disturbances, such as from earlier logging or fires.

Figure 142: LOGA14S_Light understorey burn in sclerophyll forest stops at rainforest canopy boundary

Figure 143: LOGB28RF_Rainforest margin burnt

Figure 144: LOGA319s_Approx. 100ha logging coupe planned in centre of RFSOS. Mostly understorey burnt

Figure 145: LOGA49S_Understorey burn in rainforest area where younger pre 2019-20 fire eucalypt incursion

Figure 146: LOGA36R_Upstream extent of narrow rainforest stand with understorey and canopy burn/damage

Figure 147: LOGA47S_Fire in rainforest canopy gap with logs in creek line from older logging

Unburnt rainforest sections were extensive along Log Bridge Creek and its larger tributaries.

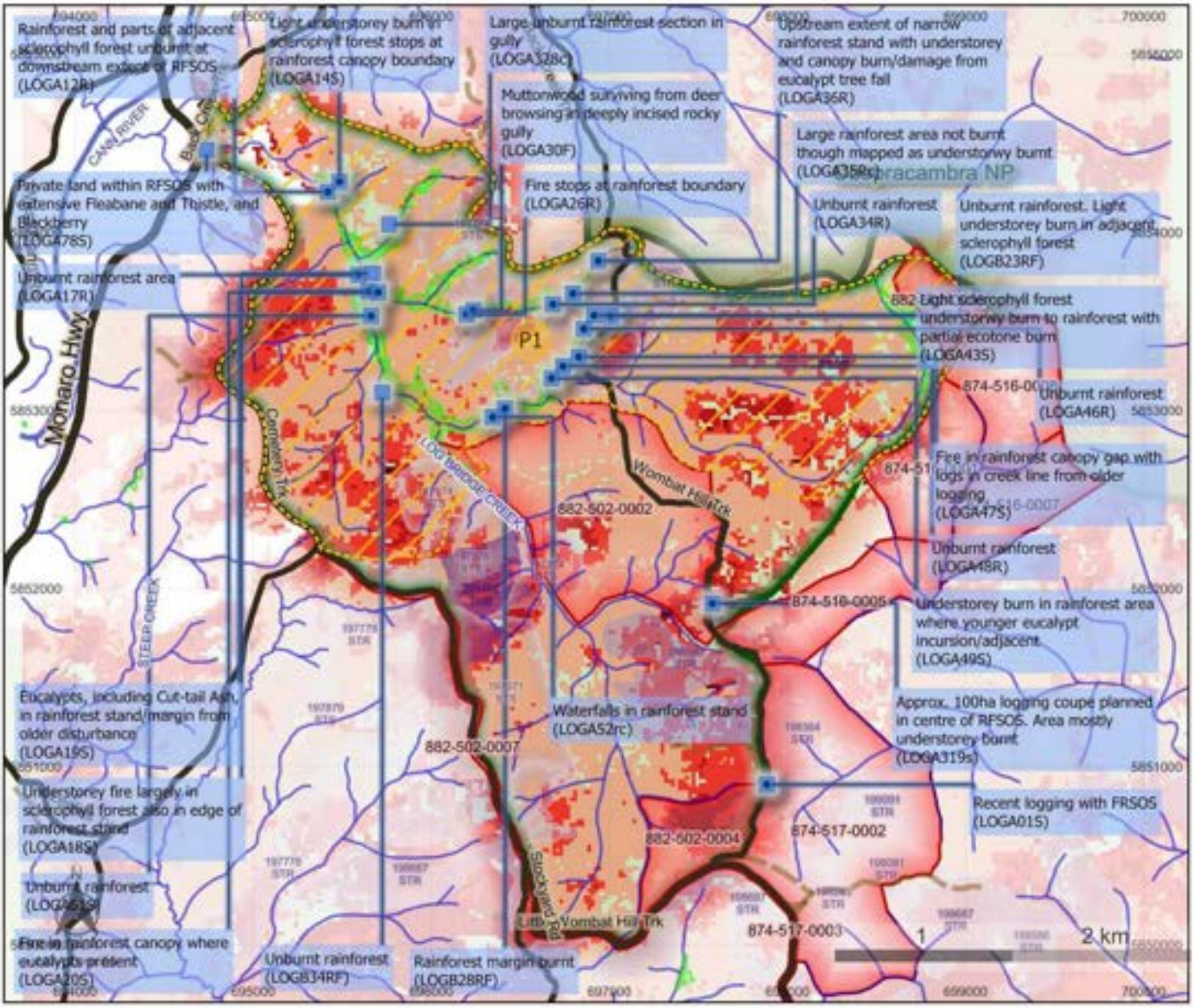
Figure 148: LOGB23RF_Unburnt rainforest. Light understorey burn in adjacent sclerophyll forest

Figure 149: LOGA12R_Rainforest and parts of adjacent sclerophyll forest unburnt at downstream extent of RFSOS

Figure 150: LOGA61S_Unburnt rainforest

10.1.5 Map of rainforest and general site condition notes locations

Log Bridge Creek (EG96) Regional Rainforest Site of Significance



Current Investigation
- Photos and notes (Circled indicates photo in report/ appendix)

Rainforest and Sites of Significance
- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance
- Regional RFSOS

Other
- Parks and Reserves
- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)
- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

- Scheduled Logging Coupes (VicForests, December 2020)

Logging History (High Severity, LOGSEASON)
- 197071
- 197980
- 198485
- 198889
- 199091
- 201112

Roads

Watercourses

10.2 Weeds (Log Bridge Creek)

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

Blackberry spp.,Thistle spp. and Red-ink Weed were the three target weeds found within the Log Bridge Creek assessment. Both Blackberry and Thistle were found establishing post fire along roadsides as scattered individual plants or as clumps/patches, as well as within sclerophyll forest and rainforest areas. Most roads surveyed throughout the RFSOS had some Blackberry scattered along their roadside and only a few larger Blackberry clumps were found and recorded. Throughout the main rainforest stand within the P1 area of the RFSOS only isolated, mostly only juvenile or smaller Blackberry plants establishing post fire, were recorded. Thistle plants, usually at the edge of or within a gap in a rainforest area, were found ranging from juvenile to flowering plants.

While 1 small juvenile Red-ink Weed was found in post fire disturbance beside Cemetery Track a larger stand of about 7 plants were found just outside the RFSOS in an overgrown road section adjacent the Monaro Highway. Also at this location two very large patches of Blackberries were found, estimated at 10×100 m and 10×50 m each.

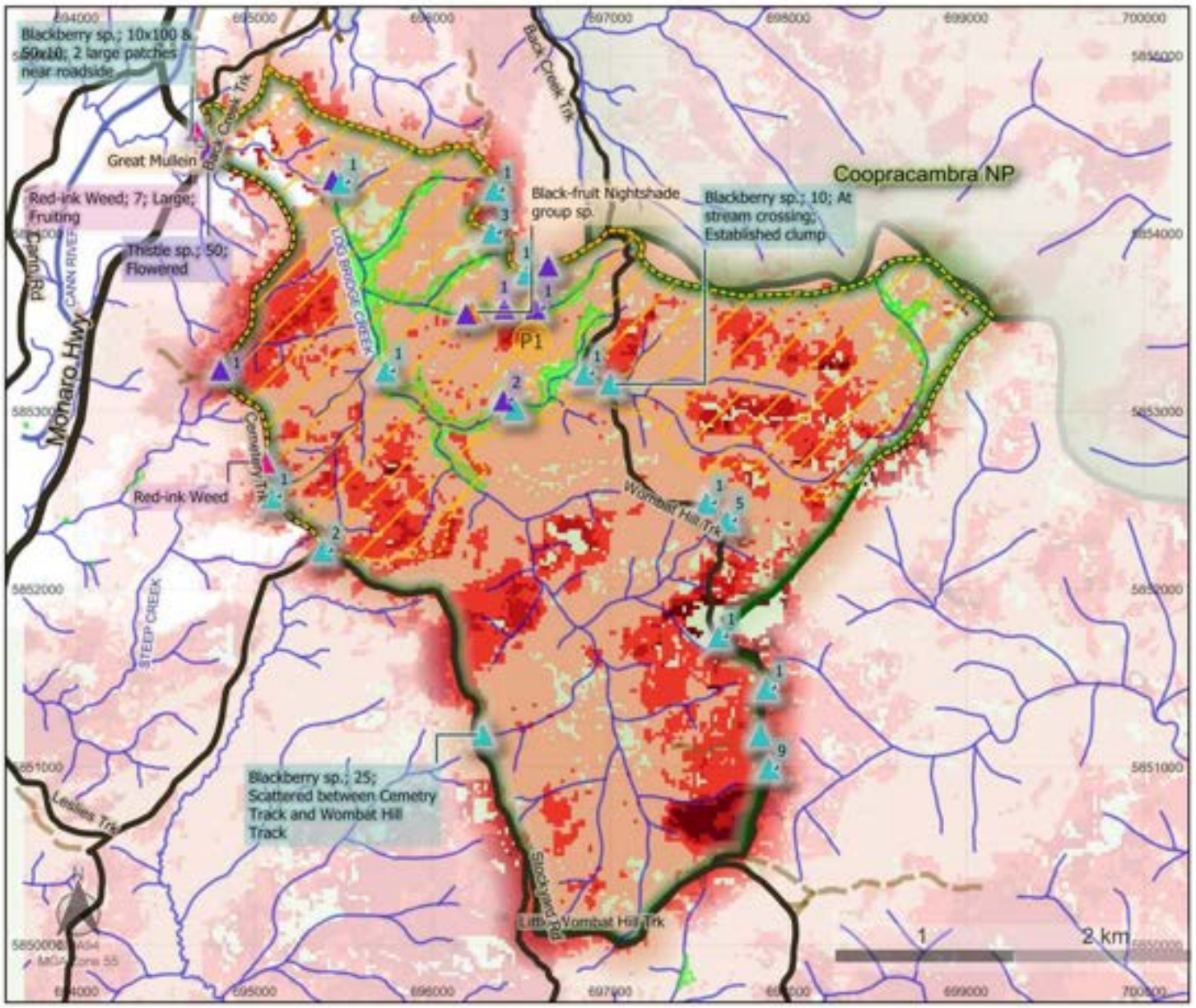
Whilst not listed as target weeds for this project introduced Fleabane species (*Erigeron spp.*) and Black-fruit Nightshades (*Solanum spp.*) were also found throughout the RFSOS. See Appendix D for further discussion of these species groups. Locations and photos of Fleabane and Black-fruit Nightshades were generally not recorded throughout this project. Large infestations of Thistle and Fleabane were also found within and adjacent to a private property farm at the downstream extent of the site adjacent the Monaro Highway.

Figure 151: LOGA76W_Blackberry sp._10x100 & 50x10_2 large patches near Monaro Highway

Figure 152: LOGA76W1_Red-ink Weed_7_Large; Fruiting in old roadway adjacent Monaro Highway

10.2.2 Map of weed species recorded

Log Bridge Creek (EG96) Regional Rainforest Site of Significance



Current Investigation

Weeds

- Blackberry sp.
- Thistle sp.
- Red-ink Weed
- Other Weed

Rainforest and Sites of Significance

- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance

- Regional RFSOS

Other

- Parks and Reserves
- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)

- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

Roads

Watercourses

10.3 Deer (Log Bridge Creek)

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

The Log Bridge Creek RFSOS was found to have a high deer presence. Sixteen locations of deer sign were recorded. Within and adjacent the rainforest, browsing was recorded on Muttonwood and deer rubbing was recorded on Lilly Pilly, Sweet Pittosporum, Blue Oliveberry, Blanket Leaf, Muttonwood and Pinkwood, a rare plant found within the RFSOS. Whilst Muttonwood saplings and any vegetation within reach of deer are more often found browsed, at one location within a deeply incised and slippery rocky rainforest gully, a small patch of Muttonwood saplings was surprisingly found undamaged.

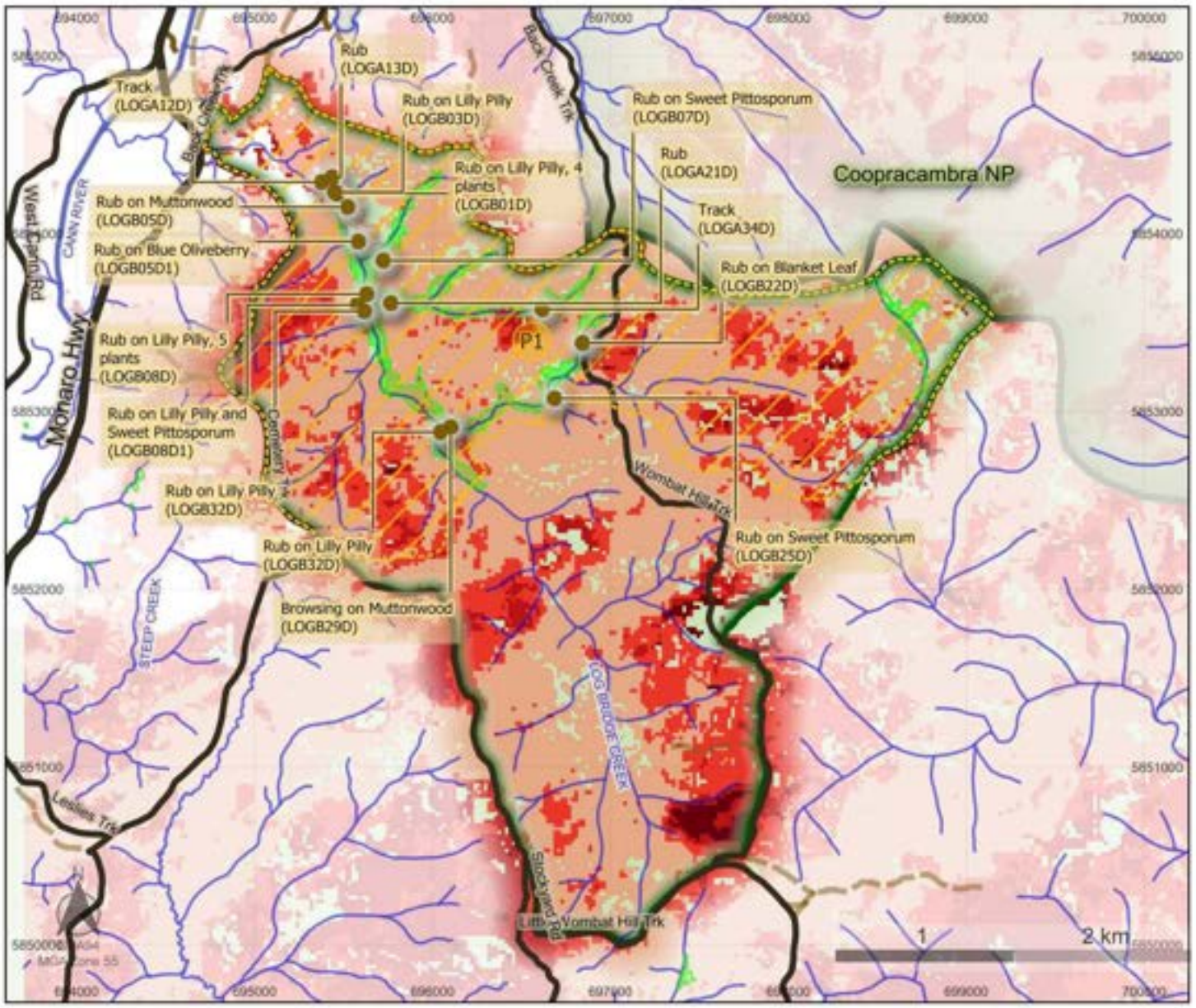
Figure 153: LOGB05D_Rub on Muttonwood

Figure 154: LOGB25D_Rub on Sweet Pittosporum

Figure 155: LOGA30F_Muttonwood surviving from deer browsing in deeply incised slippery rocky gully

10.3.2 Map of deer sign encountered

Log Bridge Creek (EG96) Regional Rainforest Site of Significance



Current Investigation
- Deer

Rainforest and Sites of Significance
- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance
- Regional RFSOS

Other
- Parks and Reserves
- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)
- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

Roads

Watercourses

10.4 Rare or threatened flora and other significant findings (Log Bridge Creek)

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

Throughout the Log Bridge Creek RFSOS assessment a total of five "Victorian Rare or Threatened" (VROT) flora species were recorded. These were:

Common Name	Scientific Name	Victorian Advisory List	FFGA	Provisional Victorian assessment
Coast Grey-box	Eucalyptus bosistoana	Rare		Endangered
Lacy Wedge-fern	Lindsaea microphylla	Rare		Endangered
Oval Fork-fern	Tmesipteris ovata	Rare		Critically Endangered
Pinkwood	Beyeria lanceolata	Rare		Endangered
River Hook-sedge	Carex nemoralis	Rare		Endangered

In sclerophyll forest slopes in the west of the Log Bridge Creek RFSOS, within Valley Grassy Forests, Coast Grey Box were found and along Wombat Hill Track Lacy Wedge-fern was found.

Figure 156: LOGA41bF_Lacy Wedge-fern

Figure 157: LOGA09F_Coast Grey-box

Figure 158: LOGA62F_Coast Grey-box

Within rainforest sections of the RFSOS River Hook-sedge and Oval Fork-fern were found.

Figure 159: LOGA59F_River Hook-sedge

Figure 160: LOGA35F_Oval Fork-fern

Pinkwood was found at three distinct locations within and adjacent to the rainforest including two separate large groups with more than twenty five plants at each location. One Pinkwood plant was found rubbed by deer.

Figure 161: LOGA22F_Pinkwood_1_Deer rubbed

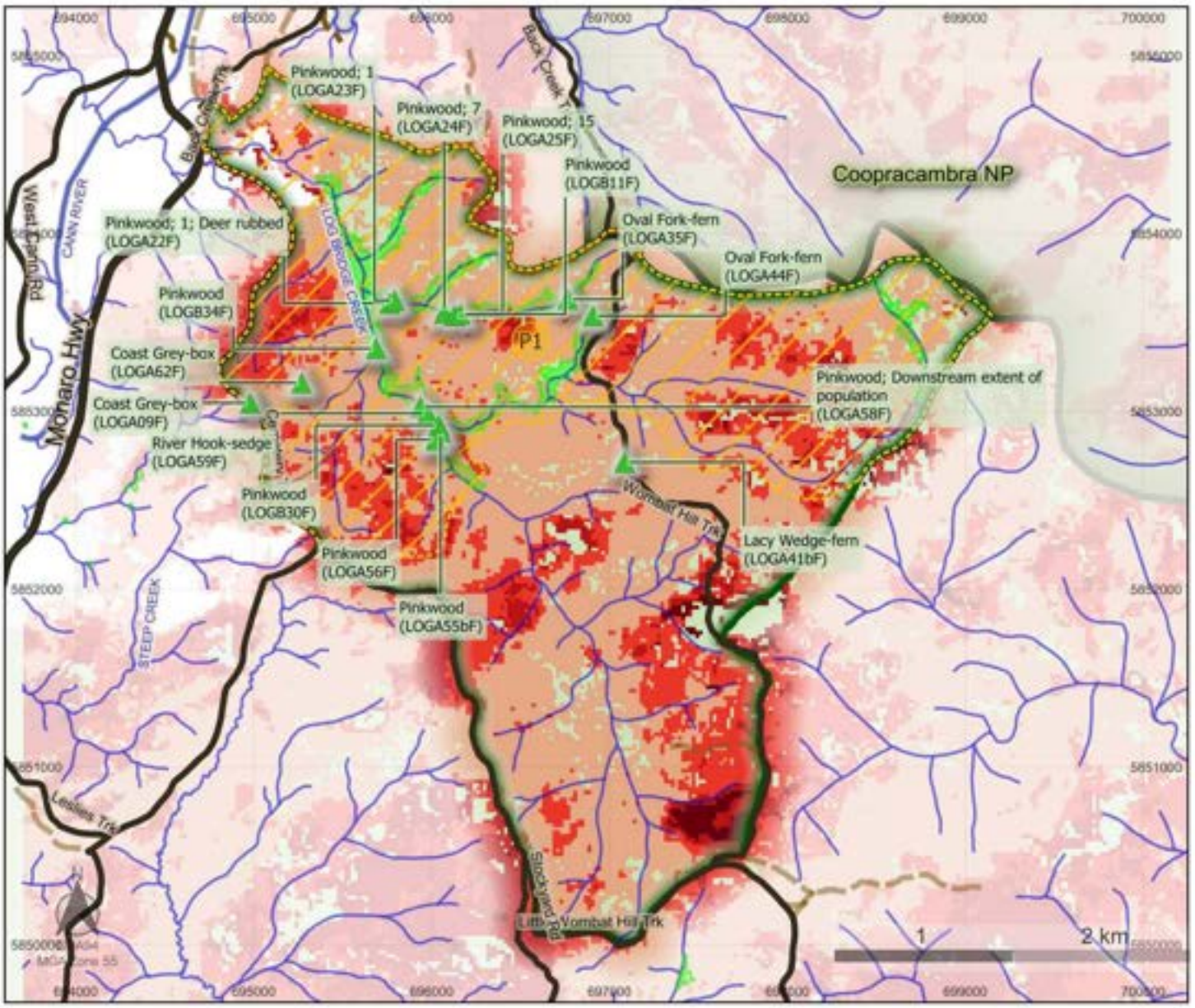
Figure 162: LOGA22F_Pinkwood_1_Deer rubbed

Figure 163: LOGA56F_Pinkwood

Figure 164: LOGA25F_Pinkwood_15

10.4.2 Map of rare or threatened flora and other significant findings

Log Bridge Creek (EG96) Regional Rainforest Site of Significance



Current Investigation
- Flora

Rainforest and Sites of Significance
- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance
- Regional RFSOS

Other
- Parks and Reserves
- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)
- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

Roads

Watercourses

11 Combienbar River (RFSOS Site: EG82) Condition Assessment Statement

11.1 Rainforest Site of Significance summary (Combienbar River)

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

The 399 hectare Combienbar River "Regional" RFSOS contains 29 hectares of mapped rainforest, 26 ha of which is mapped as Warm Temperate Rainforest and 4 ha as Gallery Rainforest (RAINFOR spatial dataset).

The 2019-2020 summer fires affected 93% (370 ha) of the RFSOS and 78% (23 ha) of the rainforest within the RFSOS, with 49% (14 ha) of the rainforest impacted by higher severity fire (medium canopy scorch and canopy burnt), 29% (8 ha) by lower severity fire (low canopy scorch but understorey burnt) and 22% (7 ha) remaining unburnt (RAINFOR & FIRE_SEV spatial datasets).

A 1959 bushfire covers about 60 ha of the RFSOS. "Fuel Reduction Burning" in 1981 is recorded over approximately 150 ha of the RFSOS in the west of the site, west of Combienbar Road (FIRE_HISTORY spatial dataset).

No logging history is mapped within the RFSOS though Blackwood stumps were found within central parts of the site and young eucalypt forest in the west of the site suggests unrecorded logging history (LOGSEASON spatial dataset). Private property farms are located both upstream (~5 km away) and downstream (<150 m away) of the site along Combienbar River/Road.

11.1.2 Roads/tracks surveyed

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

Road name	Survey status/note
Combienbar Road	Surveyed
Teachers Track	Not surveyed (Road closed with road works underway at time of survey)

11.1.3 P1 areas surveyed summary

The Combienbar 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 79 hectares in total, is approximately a 150 m buffer extending either side of Combienbar River within the RFSOS, and contains 26 hectares of mapped rainforest (RAINFOR).

11.1.4 Notes and photos of rainforest and general site condition

Over 80% the Combienbar River RFSOS has been affected by high severity fire with the only less severely impacted section of the site within and immediately to the north of a broad (~300×300m/10 ha) section of alluvial terraces Warm Temperate Rainforest. Gallery Rainforest along the Combienbar River, forming the north eastern and southern extents of the RFSOS, were very heavily impacted by the 2019-20 bushfire with large sections of almost complete Kanooka canopy scorch.

Figure 165: COMA60S_High severity fire in sclerophyll forest areas in western section of RFSOS

Figure 166: COMA04R_Most Kanooka damaged/burnt in Gallery Rainforest with some resproouting along river

Figure 167: COMA55S_High severity fire in rainforest and adjacent sclerophyll forest

Figure 168: COMA56R_Narrow sections of Gallery Rainforest severely damaged though some unburnt/re-sprouting Kanooka

Figure 169: COMA56R_Narrow sections of Gallery Rainforest severely damaged though some unburnt/re-sprouting Kanooka

Closer to the larger expanses of rainforest within the RFSOS unburnt sections of Gallery rainforest are present, though most sections have been impacted by fire at their narrow margins.

Figure 170: COMA21R_Unburnt rainforest section with low Wandering Trad presence

Figure 171: COMB18RF_Burn into rainforest margin

A very large ~250×250 m expanse of Warm Temperate Rainforest in the centre of the RFSOS remains largely unburnt with mostly damage from fire at the rainforest margins and as understorey fire. However, within the large unburnt alluvial terraces sections of the rainforest the introduced weed Wandering Trad is extensive throughout the understorey.

Smaller sections of unburnt rainforest between the Combienbar River and Combienbar Road have survived but with significant damage to and contraction of rainforest canopy species extent.

Figure 172: COMA48R_Unburnt rainforest area

Figure 173: COMA48R_Unburnt rainforest area

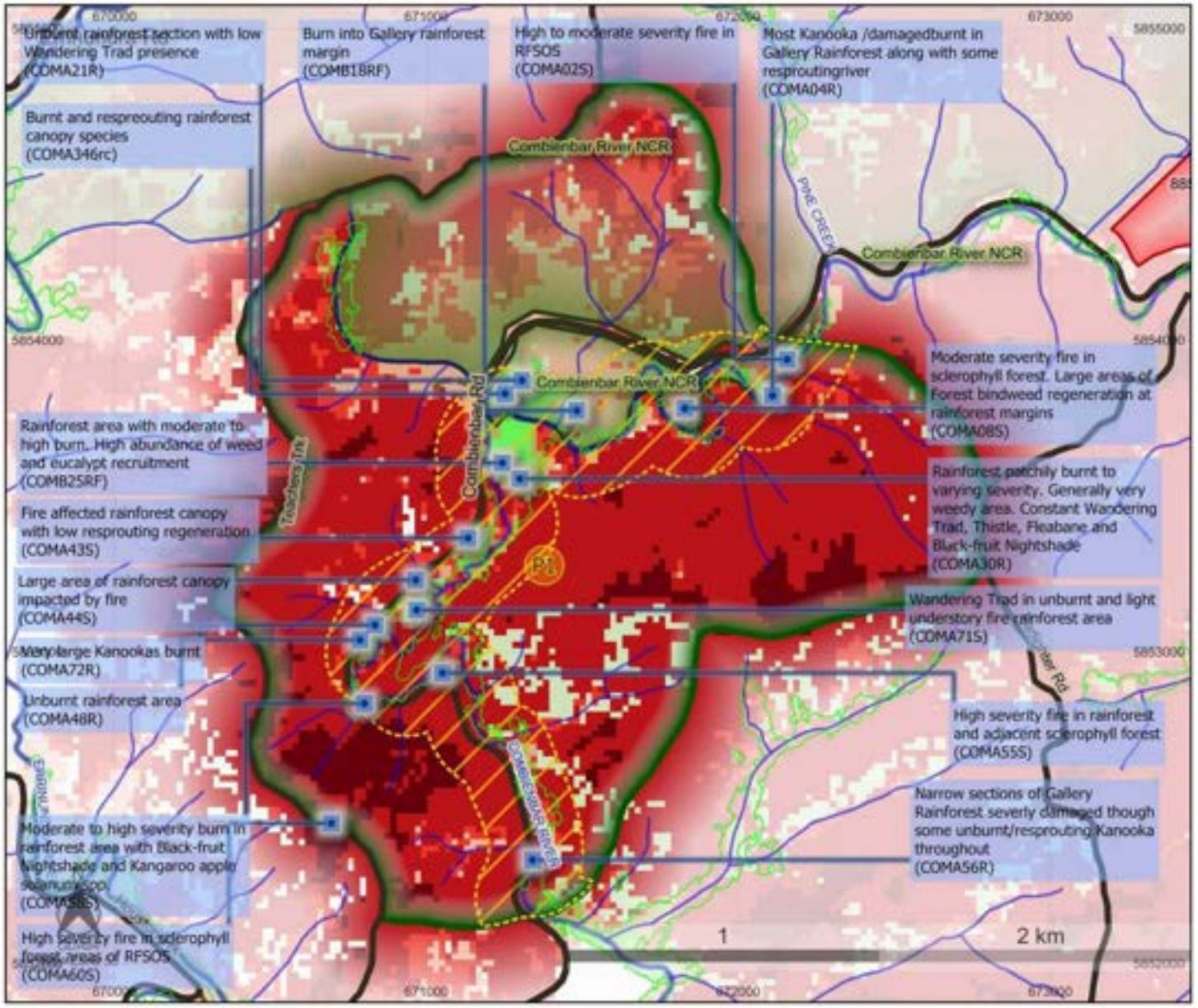
Figure 174: COMA43S_Fire affected rainforest canopy with low resprouting regeneration

Figure 175: COMA44S_Large area of rainforest canopy impacted by fire

Figure 176: COMA71S_Wandering Trad in unburnt and light understory fire rainforest area

11.1.5 Map of rainforest and general site condition notes locations

Combienbar River (EG82) Regional Rainforest Site of Significance



Current Investigation
- Photos and notes (Circled indicates photo in report/ appendix)

Rainforest and Sites of Significance
- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance
- Regional RFSOS

Other
- Parks and Reserves
- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)
- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

- Scheduled Logging Coupes (VicForests, December 2020)

Roads

Watercourses

11.2 Weeds (Combienbar River)

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

The Combienbar River RFSOS was found to have a very high weed presence and abundance with five target weed species recorded extensively throughout the site. These included Blackberry and Thistle spp., Red Ink-weed, Tutsan and Wandering Trad.

Combienbar Road, spanning the entire length of the RFSOS, had Blackberry scattered along the roadside as well as some larger clumps. Throughout the main rainforest stand within the P1 area of the RFSOS isolated Blackberry plants and small clumps were recorded. Thistle plants were found both as isolated plants within gaps in a rainforest area, ranging from juvenile to flowering plants, as well as in large populations in heavily burnt rainforest areas.

Red-ink Weed was found at multiple locations throughout the site at the edge of rainforest and within small canopy gaps. Tutsan was found in the north of the site at two locations along the Combienbar River.

Figure 177: COMA45W_Blackberry sp._15x3_Roadside

Figure 178: COMA17Wb_Red-ink Weed_1_Fruiting

Whilst not listed as target weeds for this project introduced Fleabane species (*Erigeron spp.*) and Black-fruit Nightshades (*Solanum spp.*) were found growing extensively throughout the RFSOS. See Appendix D for further discussion of these species groups. Locations and photos of Fleabane and Black-fruit Nightshades were only recorded throughout this project where they were extensive.

Figure 179: COMA15W2_Extensive Fleabane and thistle patch (20x50) growing in heavily burnt gap in rainforest

Figure 180: COMA58S_Moderate to high severity burn in rainforest area with extensive Black-fruit Nightshade (and Kangaroo Apple solanum spp.)

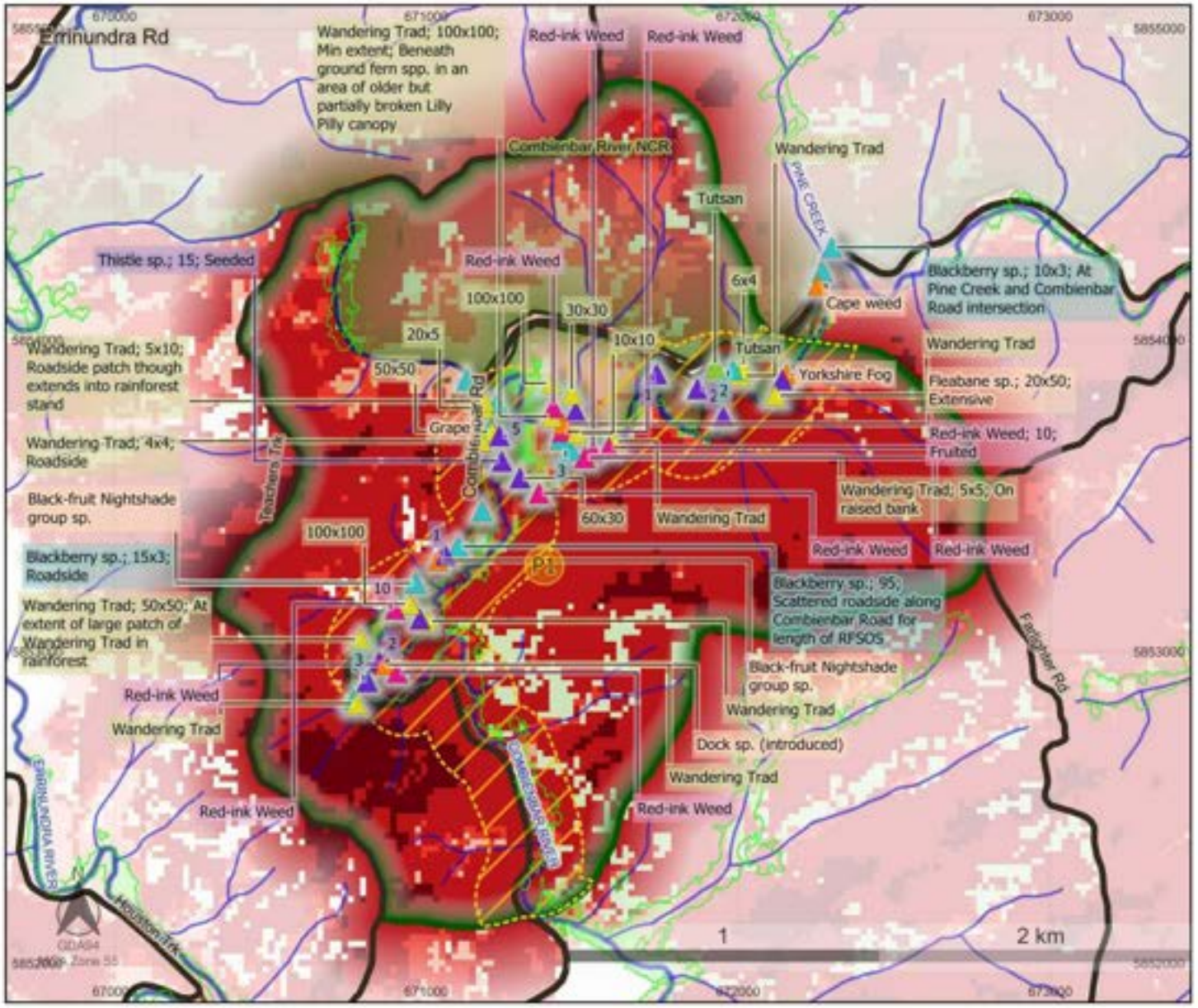
Wandering Trad was found growing extensively throughout the rainforest sections of the RFSOS including in unburnt, lightly understorey burnt, and heavily burnt areas. In the largest unburnt sections of the alluvial terraces Warm Temperate Rainforest Wandering Trad covered the majority of the ground layer, growing beneath small ground ferns and under and even out of larger tree-ferns.

Figure 181: COMA11W_Wandering Trad_5x5_On raised bank

Figure 182: COMB26W_Wandering Trad_60x30

11.2.2 Map of weed species recorded

Combienbar River (EG82) Regional Rainforest Site of Significance



11.3 Deer (Combienbar River)

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

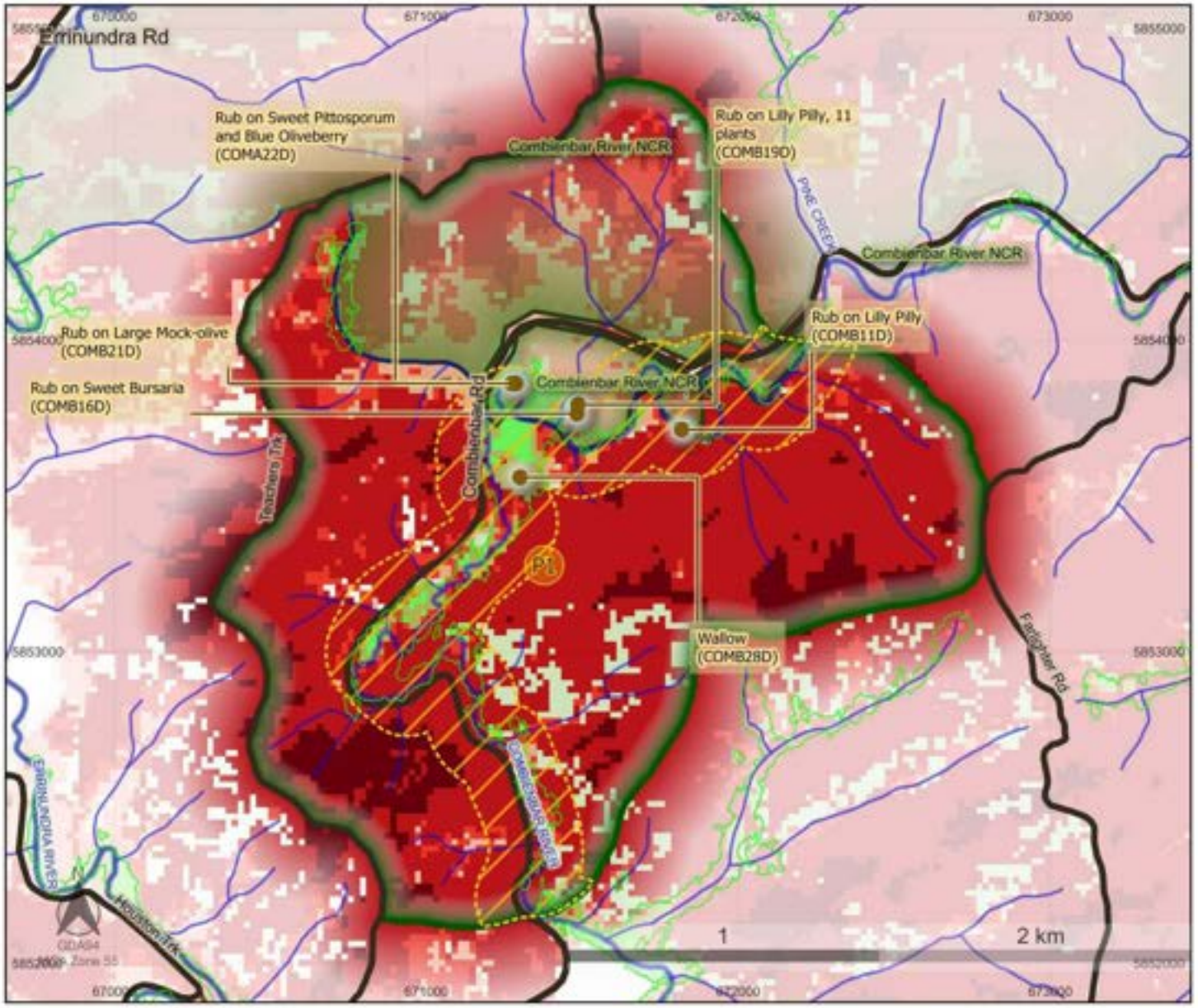
Deer sign, including rubbing and a wallow were recorded at 6 locations throughout the Combienbar River RFSOS assessment. Most significantly this included observations of rubbing on Lilly Pilly, Sweet Pittosporum, Blue Oliveberry, Large Mock-olive and Sweet Bursaria.

Figure 183: GLEB13D_Rub on Lilly Pilly, 8 plants

Figure 184: COMB16D_Rub on Sweet Bursaria

11.3.2 Map of deer sign encountered

Combienbar River (EG82) Regional Rainforest Site of Significance



Current Investigation
- Deer

Rainforest and Sites of Significance
- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance
- Regional RFSOS

Other
- Parks and Reserves
- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)
- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

Roads

Watercourses

11.4 Rare or threatened flora and other significant findings (Combienbar River)

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

Throughout the Combienbar River RFSOS assessment two "Victorian Rare or Threatened" (VROT) flora species were recorded. These were:

Common Name	Scientific Name	Victorian Advisory List	FFGA	Provisional Victorian assessment
Native Hemp	Androcalva rossii	Vulnerable		Critically Endangered
Japanese Lady-fern	Deparia petersenii subsp. congrua	Vulnerable		Endangered

Japanese Lady-fern was found at two locations within Gallery Rainforest along the Combienbar River in the northern sections of the RFSOS P1 area. One location had eleven plants. Japanese Lady-fern is a very rarely encountered fern with only 27 records of the species on the Victorian Biodiversity Atlas (VBA_FAUNA25 and VBA_FAUNA100 spatial datasets) from throughout Victoria. Japanese Lady-fern was also found within the Murrungowar RFSOS assessment within this project.

Figure 185: COMB08F_Japanese Lady-fern

Figure 186: COMB08F_Japanese Lady-fern

Figure 187: COMB09F_Japanese Lady-fern_11

Figure 188: COMB09F_Japanese Lady-fern_11

A very large stand of Native Hemp was found growing in and adjacent to a high severity burnt rainforest gully. The full extent of the population was not measured but was estimated on site to be greater than 100×100 m in area.

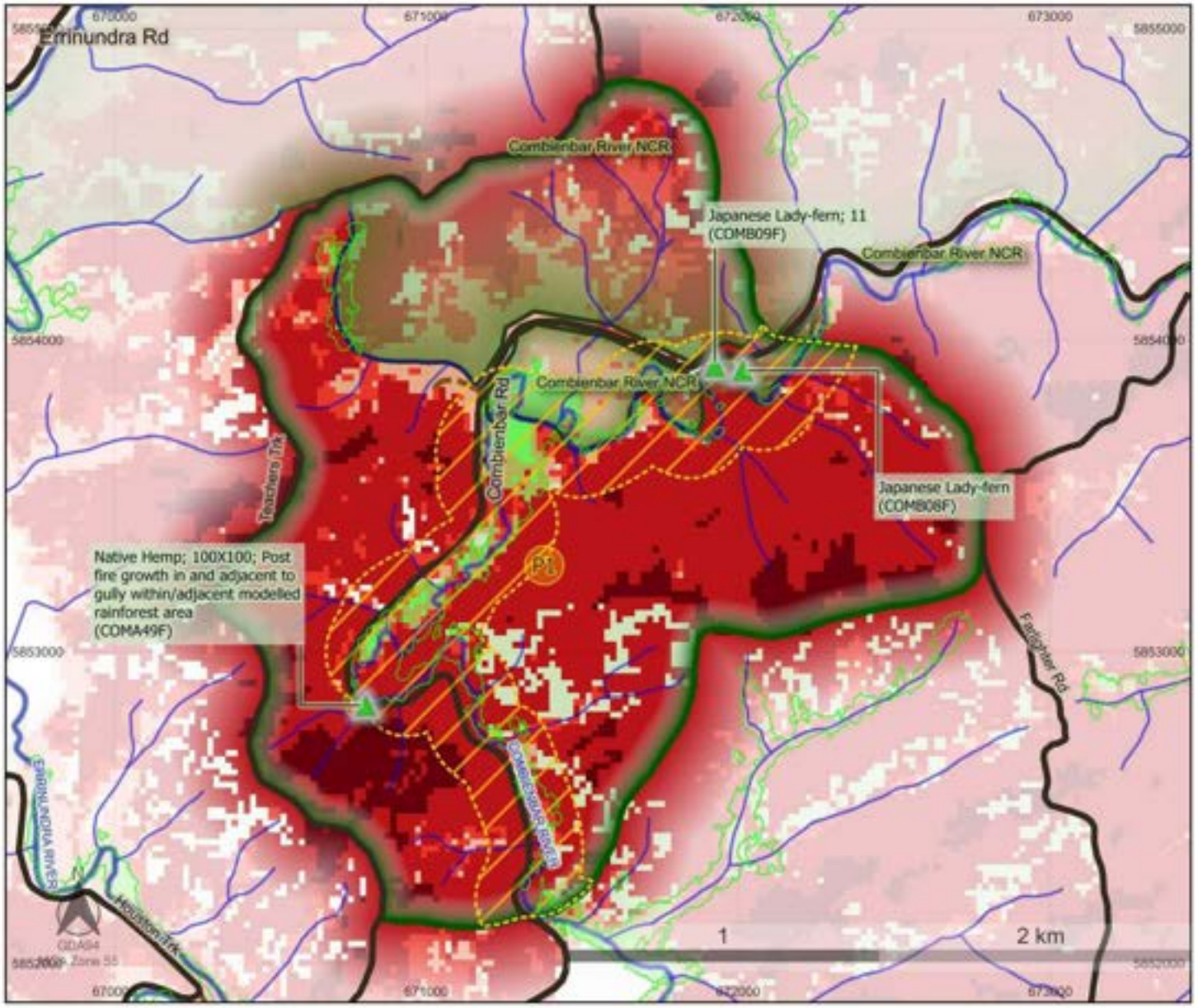
Figure 189: COMA49F_Native Hemp_100X100_Post fire growth within/adjacent modelled rainforest gully

Figure 190: COMA49F_Native Hemp

Figure 191: COMA49F_Native Hemp

11.4.2 Map of rare or threatened flora and other significant findings

Combienbar River (EG82) Regional Rainforest Site of Significance



Current Investigation
- Flora

Rainforest and Sites of Significance
- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance
- Regional RFSOS

Other
- Parks and Reserves
- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)
- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

Roads

Watercourses

12 Kanuka Creek (South Branch) (RFSOS Site: EG76) Condition Assessment Statement

12.1 Rainforest Site of Significance summary (Kanuka Creek (South Branch))

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

The 396 hectare Kanuka Creek (South Branch) "State" RFSOS contains 108 hectares of mapped rainforest, 91 ha of which is mapped as Cool Temperate Rainforest and 17 ha as Warm Temperate Rainforest (RAINFOR spatial dataset).

The 2019-2020 summer fires affected 25% (99 ha) of the RFSOS and 10% (11 ha) of the rainforest within the RFSOS, with 5% (5 ha) of the rainforest impacted by higher severity fire (medium canopy scorch and canopy burnt), 5% (6 ha) by lower severity fire (low canopy scorch but understorey burnt) and 90% (97 ha) remaining unburnt (RAINFOR & FIRE_SEV spatial datasets).

No bushfires are recorded within the RFSOS though approximately 200 ha of "Fuel Reduction" burning in both 1980 and 1981 is mapped for approximately the entire eastern half of the site. A 24 ha "Fuel Reduction" burn in the west of the site is likely a "post logging burn" as the fire boundary follows a recorded logging history boundary (FIRE_HISTORY and LOGSEASON spatial datasets).

Approximately 58 hectares (15%) of the RFSOS has been subject to high intensity logging in the past such as from "Clearfelling" and "Seed Tree" logging, 45 hectares since 1990. All of this logging was recorded within the "Priority 1" areas of the RFSOS as the entire site is a P1 area (LOGSEASON spatial dataset). Evidence of other logging not mapped, such as the presence of stumps, was recorded in other parts of the RFSOS. One logging coupe is planned which covers approximately 25 ha of the RFSOS (Timber_Release_Plan).

12.1.2 Roads/tracks surveyed

The following roads and tracks within or adjacent the Kanuka Creek (South Branch) RFSOS were surveyed as part of the vehicle based assessment:

Road name	Survey status/note
Errinundra Road	Surveyed
Crows Road	Surveyed

12.1.3 P1 areas surveyed summary

The entire Kanuka Creek (South Branch) 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 the entire RFSOS and is 396 hectares in total, containing 108 hectares of mapped rainforest (RAINFOR) in the upper catchment of Kanuka Creek. This area was surveyed from the Errinundra and Crows road intersections south to the main stream of Kanuka Creek and then downstream to the east of the site.

12.1.4 Notes and photos of rainforest and general site condition

The western headwaters of the Kanuka Creek (South Branch) RFSOS contains over 100 ha of Cool Temperate Rainforest, mostly above 600 m elevation, with extensive stands of very large old

Sassafrass, Black Oliveberry and tree-ferns. These areas of the RFSOS are largely unaffected by the 2019-20 summer bushfires.

Figure 192: KANA05R_Large Cool Temperate Rainforest/Southern Sassafrass stand outside 2019-20 bushfire extent

Figure 193: KANA09R_Large Southern Sassafrass in unburnt Cool Temperate Rainforest. Burnt sclerophyll forest and high severity fire can be seen in the background on a slope less than 1 km away as well as on the opposite (eastern) side of the Errinundra Valley.

Within the eastern half of the RFSOS high severity fire impacted both sclerophyll forest and Warm Temperate Rainforest. The highest severity fire impacts on rainforest sections were mostly confined to more fragmented sections in the north east of the site and only lower severity fire was recorded around Warm Temperate Rainforest along the main Kanuka Creek channel. These lower severity fire effects included areas of understorey fire within and adjacent to the rainforest with some areas of burnt rainforest canopy species, generally where sections of the otherwise lower severity fire in the sclerophyll forest were moderate to high severity.

Figure 194: KANA16S_Understorey fire in sclerophyll forest

Figure 195: KANA16S_Understorey fire in sclerophyll forest

Figure 196: KANA16S_Understorey fire in sclerophyll forest. Extensive Forest Pennywort area

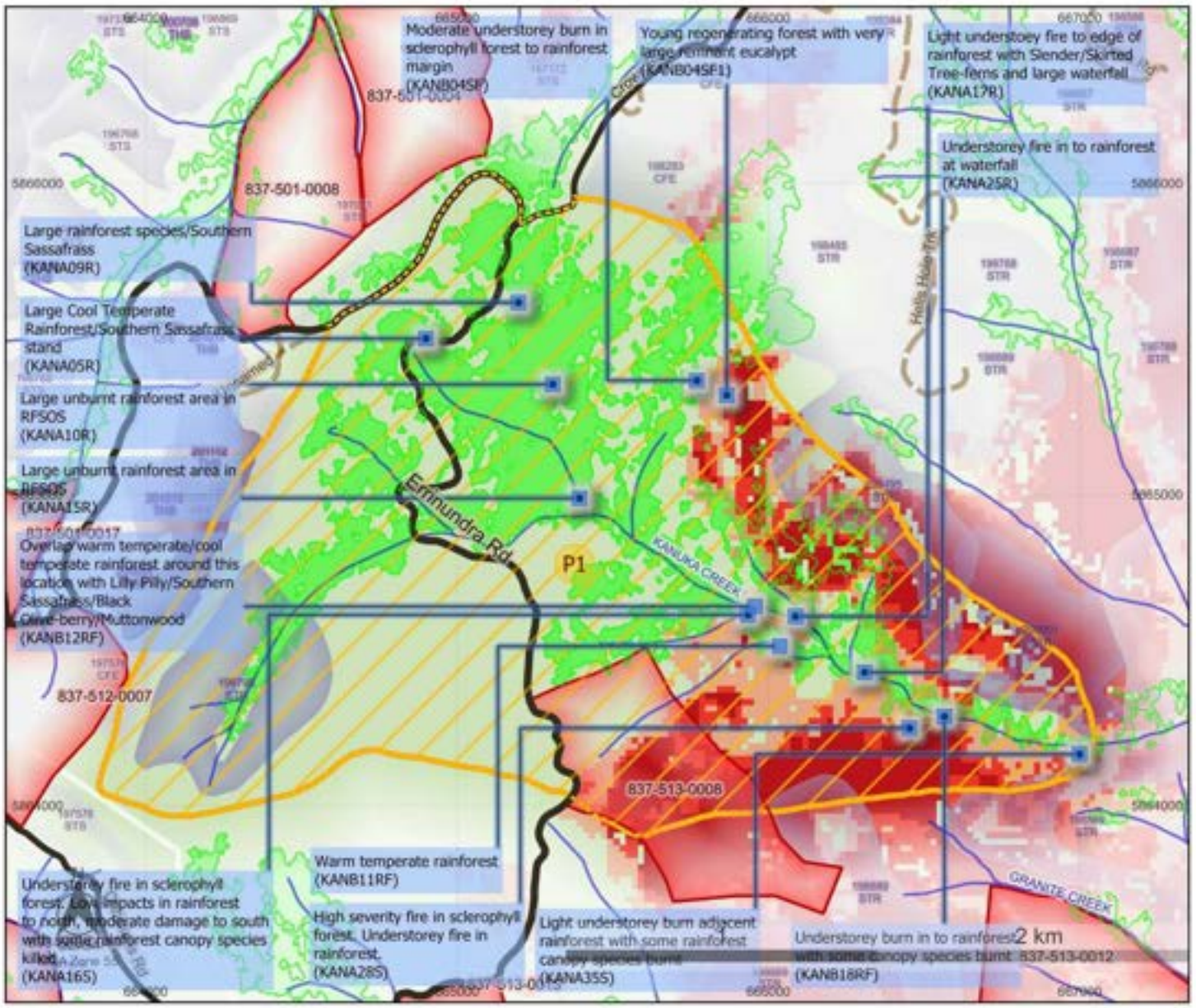
Figure 197: KANA17R_Light understorey fire to edge of rainforest with Slender/Skirted Tree-ferns and large waterfall

Figure 198: KANA28S_High severity fire in sclerophyll forest. Understorey fire in rainforest

Figure 199: KANA28S_High severity fire in sclerophyll forest. Understorey fire in rainforest

12.1.5 Map of rainforest and general site condition notes locations

Kanuka Creek (South Branch) (EG76) State Rainforest Site of Significance



Current Investigation
- Photos and notes (Circled indicates photo in report/ appendix)

Rainforest and Sites of Significance
- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance
- State RFSOS

Other
- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)
- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

- Scheduled Logging Coupes (VicForests, December 2020)

Logging History (High Severity, LOGSEASON)
- 196768
- 196970
- 197071
- 197980
- 198485
- 198889
- 201011
- 201112

Roads

Watercourses

12.2 Weeds (Kanuka Creek (South Branch))

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

Blackberry and Thistle were the only target weed species (see Chapter 1) recorded throughout the Kanuka Creek (South Branch) RFSOS. A very large patch of Blackberry was found near the intersection of Errinundra Road along Crows Road. Small numbers of Thistle were the only weeds found establishing post fire within and adjacent to the main rainforest stand. These plants ranged from juvenile to flowering plants in the eastern more heavily burnt Warm temperate Rainforest section of the RFSOS.

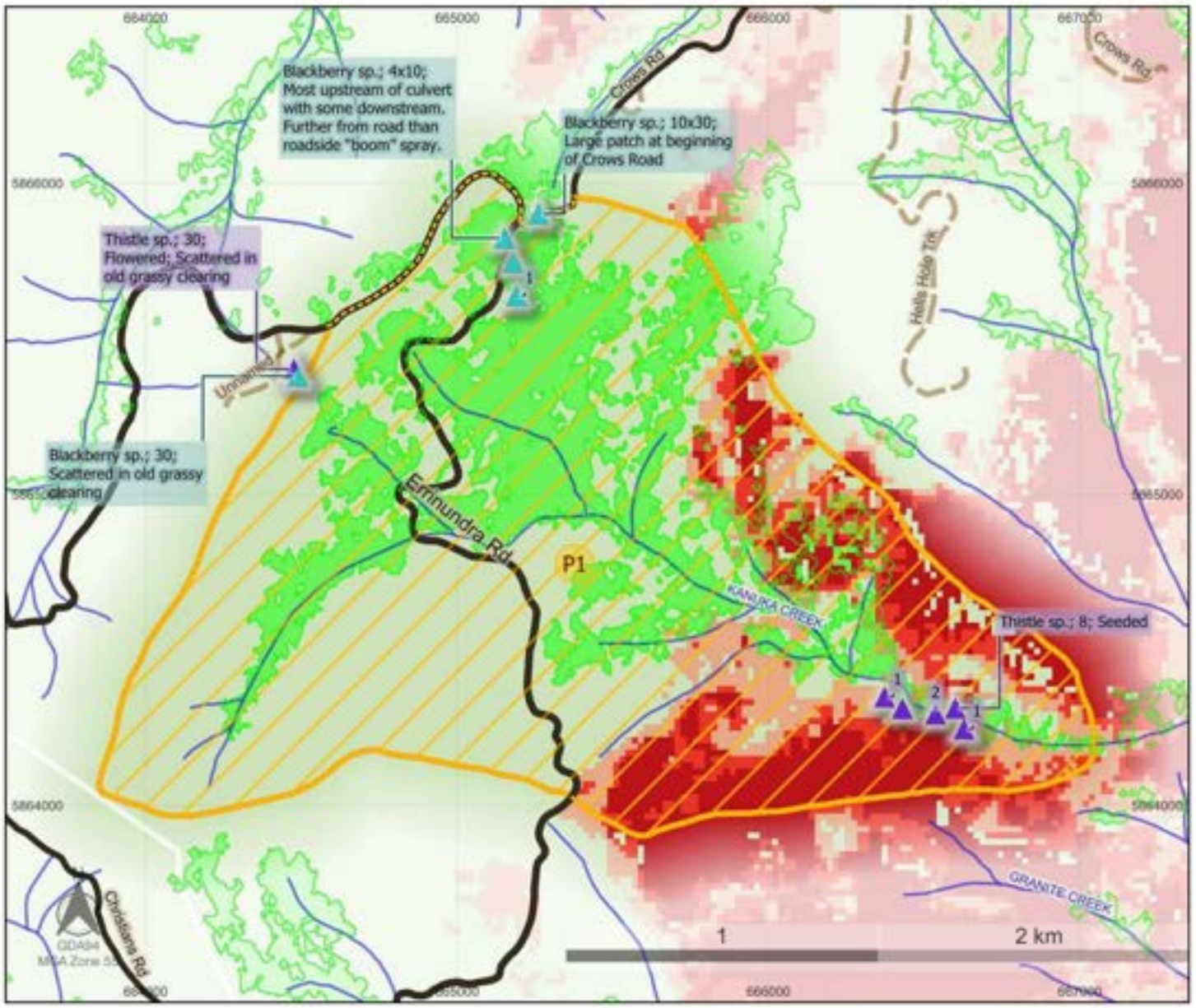
Figure 200: KANA02W_Blackberry sp._10x30_Large patch at beginning of Crows Road

Figure 201: KANA02W_Blackberry sp._10x30_Crows Rd

Figure 202: KANA26W_Thistle in understorey burn

12.2.2 Map of weed species recorded

Kanuka Creek (South Branch) (EG76) State Rainforest Site of Significance



Current Investigation

Weeds

- Blackberry sp.
- Thistle sp.

Rainforest and Sites of Significance

- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance

- State RFSOS

Other

- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)

- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

Roads

Watercourses

12.3 Deer (Kanuka Creek (South Branch))

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

No deer sign was found in the western Cool Temperate Rainforest sections of the (Kanuka Creek (South Branch) RFSOS though deer sign was found at 4 locations in the eastern (lower slopes) Warm Temperate Rainforest section. This included deer scat, rubbing on a Blackwood tree and two wallows.

Figure 203: KANB22D_Wallow

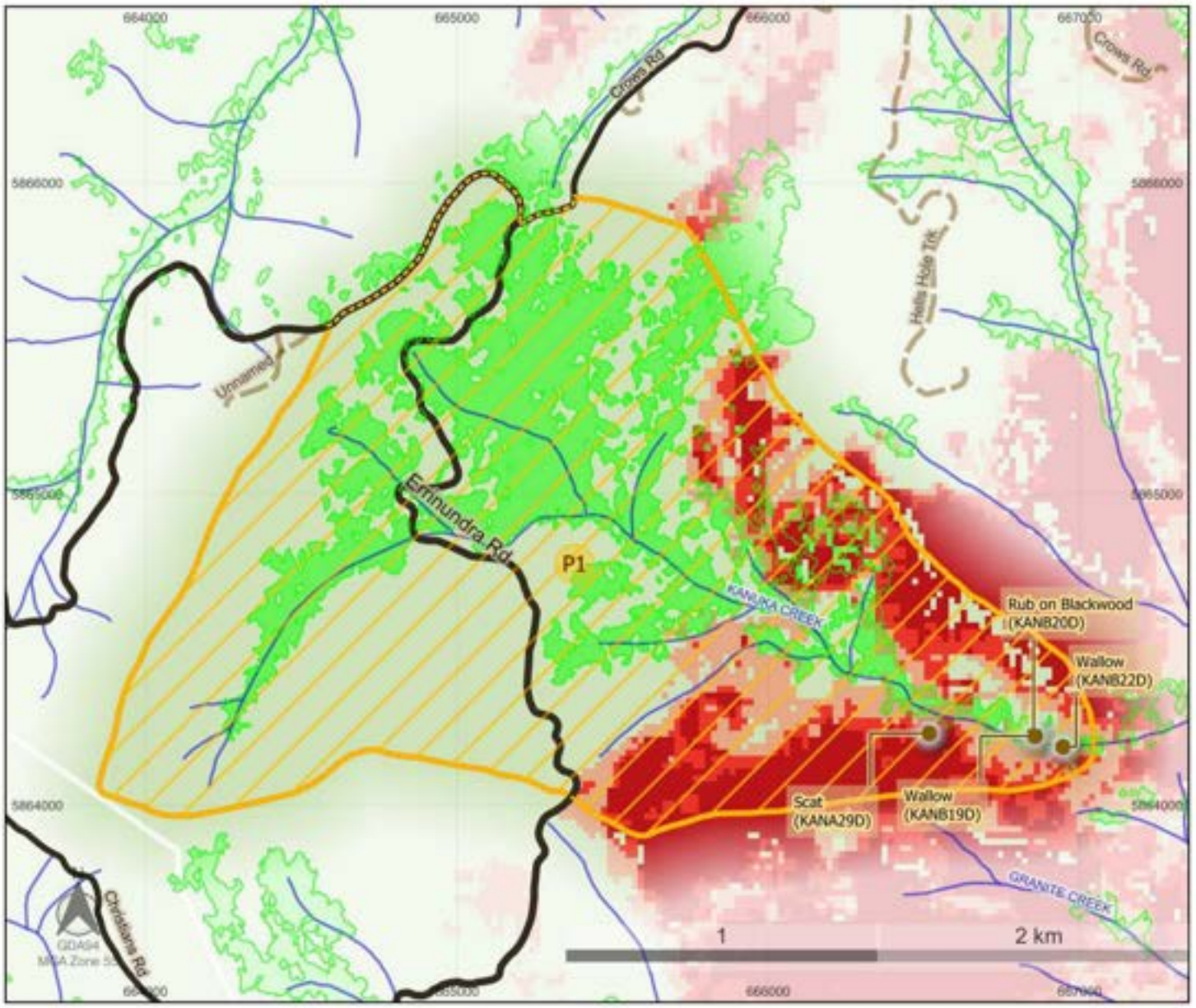
Figure 204: KANB19D_Wallow

Figure 205: KANA29D_Scat

Figure 206: KANB20D_Rub on Blackwood

12.3.2 Map of deer sign encountered

Kanuka Creek (South Branch) (EG76) State Rainforest Site of Significance



Current Investigation
- Deer

Rainforest and Sites of Significance
- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance
- State RFSOS

Other
- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)
- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

Roads

Watercourses

12.4 Rare or threatened flora and other significant findings (Kanuka Creek (South Branch))

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

Throughout the Kanuka Creek (South Branch) RFSOS assessment a total of five "Victorian Rare or Threatened" (VROT) flora species were recorded. These were:

Common Name	Scientific Name	Victorian Advisory List	FFGA	Provisional Victorian assessment
Slender Tree-fern	Cyathea cunninghamii	Vulnerable	Listed	Critically Endangered
Skirted Tree-fern	Cyathea ×marcescens	Vulnerable		Critically Endangered
Errinundra Shining Gum	Eucalyptus denticulata	Rare		Endangered
Forest Geebung	Persoonia silvatica	Rare		Endangered
River Hook-sedge	Carex nemoralis	Rare		Endangered

Errinundra Shinning Gum, Forest Geebung and River Hook-sedge were all found in the western higher elevation Cool Temperate Rainforest sections of the RFSOS. More than fifteen Slender and Skirted Tree-ferns were found within Warm Temperate Rainforest in a deeply incised gully just downstream of a large waterfall and the sharp overlap transition from Cool Temperate Rainforest.

Figure 207: KANA17R_Light understoey fire to edge of rainforest with Slender/Skirted Tree-ferns and large waterfall

Figure 208: KANA21F_Slender Tree-fern_1_1 alive and 1 dead

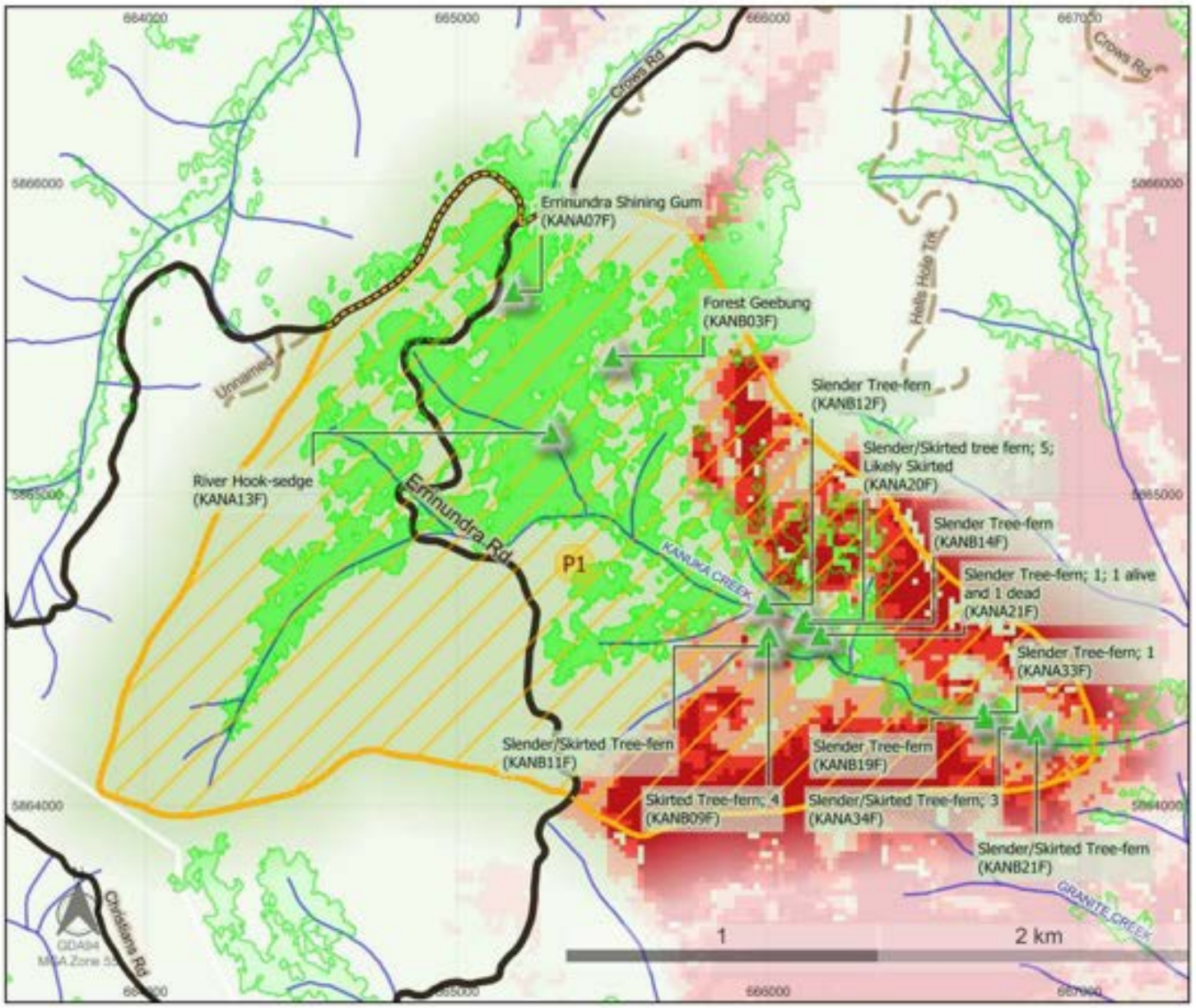
Figure 209: KANA21F_Slender Tree-fern_1_1 alive and 1 dead

Figure 210: KANA17R_Light understoey fire to edge of rainforest with SlenderSkirted Tree-ferns

Figure 211: KANA17R_Light understoey fire to edge of rainforest with Slender/Skirted Tree-ferns

12.4.2 Map of rare or threatened flora and other significant findings

Kanuka Creek (South Branch) (EG76) State Rainforest Site of Significance



Current Investigation
- Flora

Rainforest and Sites of Significance
- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance
- State RFSOS

Other
- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)
- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

Roads

Watercourses

13 Hensleigh – Far Creek (RFSOS Site: EG85) Condition Assessment Statement

13.1 Rainforest Site of Significance summary (Hensleigh – Far Creek)

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

The 2622 hectare Hensleigh – Far Creek "Regional" RFSOS contains 361 hectares of mapped rainforest, 321 ha of which is mapped as Cool Temperate Rainforest and 40 ha as Warm Temperate Rainforest (RAINFOR spatial dataset). The RFSOS is divided between: the Hensleigh Creek catchment (ultimately of the Bemm River) west of Hensleigh Creek Road and south of Coast Range Road; the head waters of the Cann River east of Hensleigh Creek Road and south of Coast Range Road; and the Far Creek catchment (part of the Snowy River) north of Coast Range Road.

The 2019-2020 summer fires affected 38% (1006 ha) of the RFSOS and 17% (62 ha) of the rainforest within the RFSOS, with 7% (26 ha) of the rainforest impacted by higher severity fire (medium canopy scorch and canopy burnt), 10% (36 ha) by lower severity fire (low canopy scorch but understorey burnt) and 83% (300 ha) remaining unburnt (RAINFOR & FIRE_SEV spatial datasets).

The Cann River catchment part of the RFSOS, east of Hensleigh Creek Road and south of Coast Range Road, is almost entirely within the mapped area of a 1983 bushfire. Approximately 10 "Fuel Reduction" burns mapped within the RFSOS are likely "post logging burns" as they follow the boundaries of logging coupes (FIRE_HISTORY and LOGSEASON spatial datasets).

Approximately 1010 hectares (39%) of the RFSOS has been subject to high intensity logging in the past such as from "Clearfelling" and "Seed Tree" logging, 646 hectares since 1990. Approximately 100 ha of this logging since 1990 was recorded within the "Priority 1" areas of the RFSOS (LOGSEASON spatial dataset).

13.1.2 Roads/tracks surveyed

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

Road name	Survey status/note
Buldah River Road	Surveyed
Coast Range Road	Surveyed
Cobon Road	Surveyed
Cuttail Road	Surveyed
Golden Gully Track	Surveyed (except for overgrown section between Quadra Link Road/Hensleigh Creek Road)
Hensleigh Creek Road	Surveyed
Quadra Link Road	Surveyed
Short Cut Track	Surveyed

13.1.3 P1 areas surveyed summary

The Hensleigh – Far Creek RFSOS has two large "Priority 1" (**P1**) areas (mapped in the RFSOS100 spatial dataset), one in each of the Hensleigh Creek and Cann River sections of the RFSOS. Due to project time constraints these P1 areas were only surveyed at selected sections where their main rainforest stands intersected the 2019-20 bushfire. These P1 areas are 429 hectares in total and

contain 148 hectares of mapped rainforest (RAINFOR) extending largely in parallel to more than 15 km of streams.

13.1.4 Notes and photos of rainforest and general site condition

The 2019-20 summer fires had its most severe impacts in the eastern third of the Hensleigh – Far Creek RFSOS, mostly outside the two P1 areas within the RFSOS. In the north east of the RFSOS very high severity fire covered large areas of the sclerophyll forest slopes. Linear Cool Temperate Rainforest stands within these areas were also affected by high severity fire that significantly reduced the rainforest canopy species presence and extent within these stands.

Figure 212: HENA14S_High severity fire in logged sclerophyll forest adjacent burnt rainforest areas

Figure 213: HENA14S_High severity fire in logged sclerophyll forest adjacent burnt rainforest areas

Figure 214: HENA17S_High severity fire in/adjacent rainforest with isolated resprouting Southern Sassafrass

Figure 215: HENA17S_High severity fire in/adjacent rainforest with isolated resprouting Southern Sassafrass

Fire impacts within each of the two P1 areas were much less extensive, relative to the very large overall size and extent of the rainforest within these areas. Quadra Link Road, which forms the eastern boundary of the P1 area within the central and eastern Cann River section of the RFSOS formed the border of the very high severity fires described above. West of this road, between the road and the main rainforest stands, fire was largely of lower severity with understorey fire throughout the sclerophyll forest. At the rainforest margin this understorey fire either stopped at the edge of the rainforest or continued as a low intensity understorey fire close to the boundary.

Figure 216: HENA41R_Small area of understorey fire in rainforest with entire area of adjacent sclerophyll forest understorey burnt

Figure 217: HENA41R_Small area of understorey fire in rainforest with entire area of adjacent sclerophyll forest understorey burnt

The majority of the rainforest within the central-eastern Cann River catchment P1 area is largely unaffected by the 2019-20 fires and in undisturbed sections of the P1 area extensive Cool Temperate Mixed Forest rainforest elements were observed.

Figure 218: HENA40R_Unburnt Cool Temperate Rainforest

Figure 219: HENA37R_Large areas of slope unlogged and with extensive Cool Temperate Mixed forest elements

Figure 220: HENA37R_Large areas of slope unlogged and with extensive Cool Temperate Mixed forest elements

Figure 221: HENA37R_Large areas of slope unlogged and with extensive Cool Temperate Mixed forest elements

Figure 222: HENA37R_Large areas of slope unlogged and with extensive Cool Temperate Mixed forest elements

Between Hensleigh Creek Road and the main rainforest stand within the western Hensleigh Creek catchment P1 area sclerophyll forest slopes were mostly understorey burnt with occasional patches of moderate to higher severity fire where eucalypt canopies were burnt. In one section surveyed within the walking based assessment rainforest within narrow gullies adjacent two patches of higher severity burnt sclerophyll forest were impacted by lower severity understorey fire and some areas where rainforest canopy was burnt.

Figure 223: HENA51R_Hensligh Creek catchment P1 area with mostly understorey burn and some rainforest canopy species killed and resprouting

Figure 224: HENA51R_Hensligh Creek catchment P1 area with mostly understorey burn and some rainforest canopy species killed and resprouting

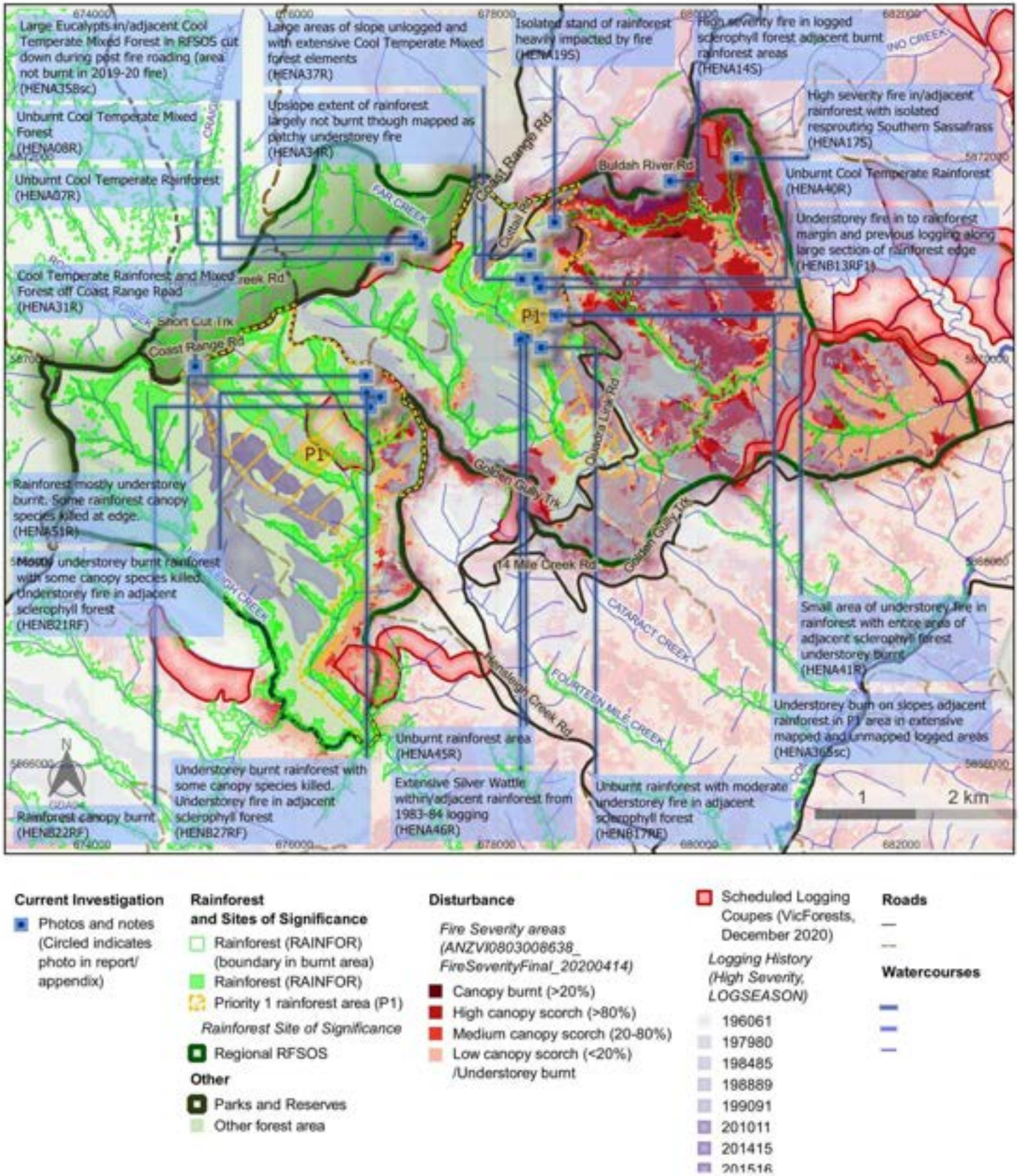
Cool Temperate Rainforest and Cool Temperate Mixed Forest within the northern Far Creek catchment section of the RFSOS was largely unaffected by fire save for a small area to the east at the boundary of very high severity fire near the intersection of Coast Range Road and Cuttail Road. However, in this area large eucalypts in areas unaffected by the 2019-20 fires adjacent Cool Temperate Rainforest and Cool Temperate Mixed Forest were cut down during post-fire roadworks near to a planned logging coupe that overlaps these rainforest areas.

Figure 225: HENA08R_Unburnt Cool Temperate Mixed Forest

Figure 226: HENA358sc_Large Eucalypts in/adjacent Cool Temperate Mixed Forest in RFSOS cut down during post fire roading (in unburnt area)

13.1.5 Map of rainforest and general site condition notes locations

Hensleigh - Far Creek (EG85) Regional Rainforest Site of Significance



13.2 Weeds (Hensleigh – Far Creek)

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

Blackberry and Thistle were the only target weed species (see Chapter 1) recorded throughout the Hensleigh – Far Creek RFSOS. Both Blackberry and Thistle were found establishing in unburnt and burnt areas along roadsides as scattered individual plants or as clumps/patches as well as in low numbers in isolated burnt sections of sclerophyll forest and rainforest areas.

Cobon Road, Cuttail Road, Golden Gully Track (in the east, northeast and southeast of the RFSOS respectively) had the RFSOS more heavily infested roads with Blackberry. Thistle plants were found more readily in the western Hensleigh Creek catchment P1 area, usually at the edge of burnt rainforest or within a gap in a rainforest area, were found ranging from juvenile to flowering plants.

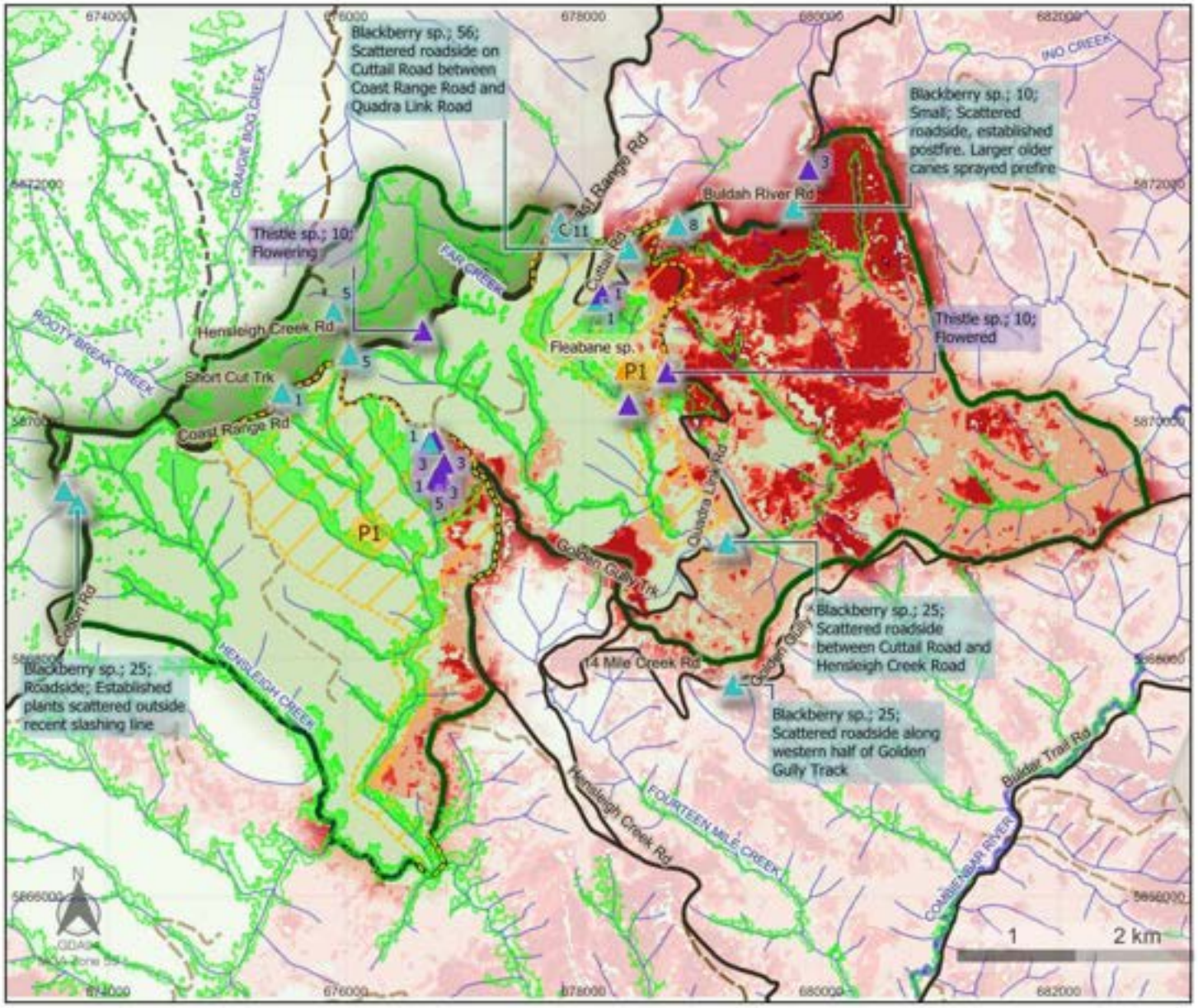
Figure 227: HENA06W_Thistle sp._10_Flowering

Figure 228: HENA03W_Blackberry sp._25_Roadside; Established plants scattered outside recent slashing line

Figure 229: HENA06W_Thistle sp._10_Flowering

13.2.2 Map of weed species recorded

Hensleigh - Far Creek (EG85) Regional Rainforest Site of Significance



Current Investigation

Weeds

- Blackberry sp.
- Thistle sp.
- Other Weed

Rainforest and Sites of Significance

- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance

- Regional RFSOS

Other

- Parks and Reserves
- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)

- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

Roads

Watercourses

13.3 Deer (Hensleigh – Far Creek)

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

No deer sign was recorded within the Hensleigh – Far Creek RFSOS during this projects' one day each of walking and vehicle based assessments. The RFSOS is very large and only a very small proportion of the site was surveyed during the walking based assessment.

13.4 Rare or threatened flora and other significant findings (Hensleigh – Far Creek)

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

Throughout the Hensleigh – Far Creek RFSOS assessment two "Victorian Rare or Threatened" (VROT) flora species were recorded. These were:

Common Name	Scientific Name	Victorian Advisory List	FFGA	Provisional Victorian assessment
Forest Geebung	Persoonia silvatica	Rare		Endangered
River Hook-sedge	Carex nemoralis	Rare		Endangered

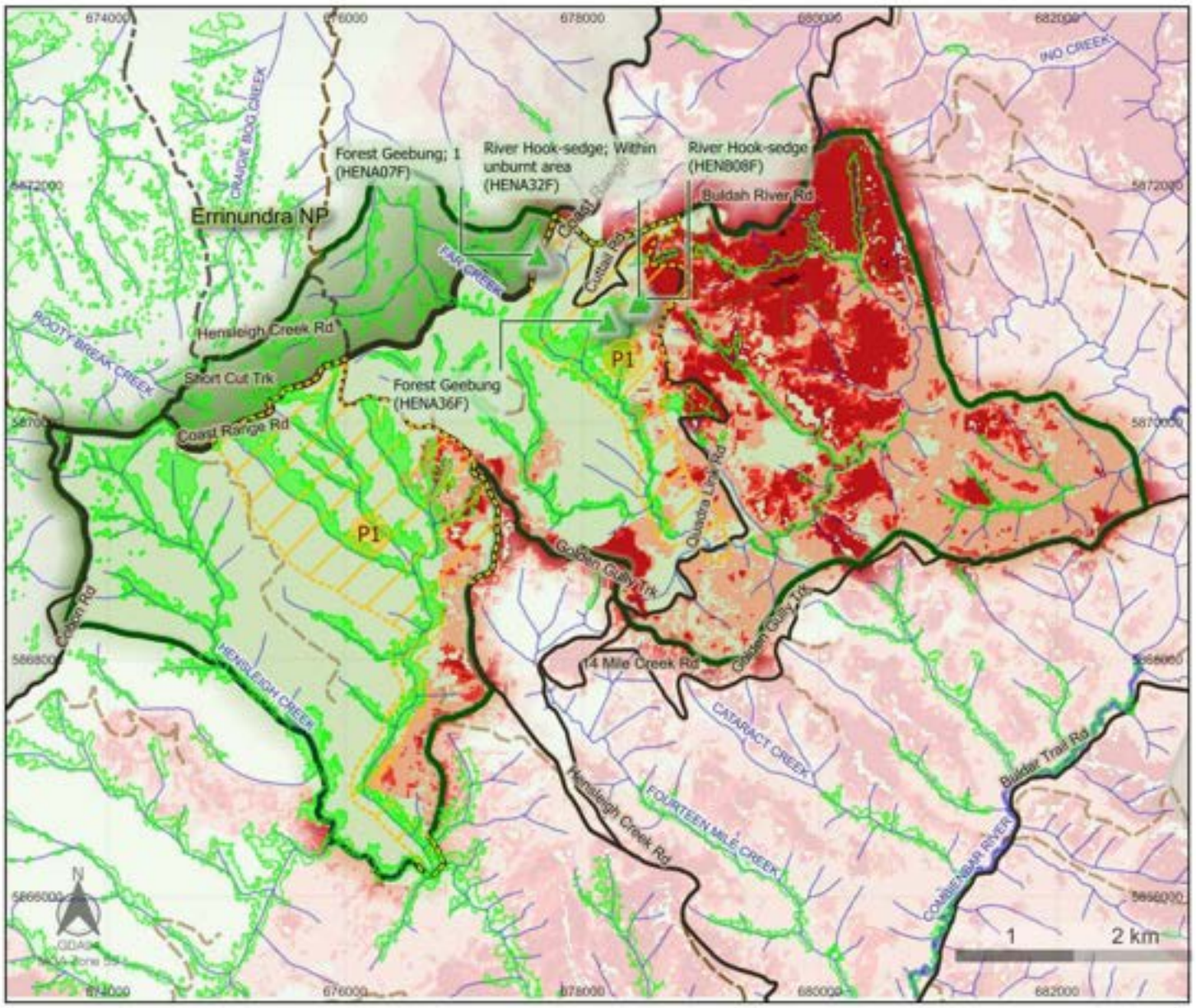
River Hook-sedge plants were found in unburnt rainforest sections of the central eastern P1 area in the headwaters of the Cann River catchment. Forest Geebung was found at two locations within the same P1 area including in Cool Temperate Mixed Forest settings.

Figure 230: HENA07F_Forest Geebung_1

Figure 231: HENA32F_River Hook-sedge_Within unburnt area in P1 rainforest

13.4.2 Map of rare or threatened flora and other significant findings

Hensleigh - Far Creek (EG85) Regional Rainforest Site of Significance



Current Investigation
- Flora

Rainforest and Sites of Significance
- Rainforest (RAINFOR) (boundary in burnt area)
- Rainforest (RAINFOR)
- Priority 1 rainforest area (P1)

Rainforest Site of Significance
- Regional RFSOS

Other
- Parks and Reserves
- Other forest area

Disturbance

Fire Severity areas (ANZVI0803008638_ FireSeverityFinal_20200414)
- Canopy burnt (>20%)
- High canopy scorch (>80%)
- Medium canopy scorch (20-80%)
- Low canopy scorch (<20%) /Understorey burnt

Roads

Watercourses

14 References

- Duncan, B. and Isaac, G., Ferns and Allied Plants of Victoria, Tasmania and South Australia, Melbourne University Press, Melbourne, 1986
- Fauna and Flora Research Collective, "150716 – Lastreopsis hispida et. al. detection report – Kuark_Larissa Lane – AL_FFRC_65e", https://faunaandfloraresearchcollective.wordpress.com/the-species/warm-temperate-rainforest/, accessed 1 May 2021
- Goongerah Environment Centre, Slender and Skirted Tree-ferns and Bristly shield fern, coupes 832-502-0010, 832-502-0011 & 832-502-0019, https://www.geco.org.au/reports, accessed 1 May 2021
- Google, "Google Satellite imagery", https://mt1.google.com/vt/lyrs=s&x={x}&y={y}&z={z}, accessed 02-04/2021
- Peel, B., Rainforests and cool temperate mixed forests of Victoria, Department of Natural Resources and Environment, East Melbourne, 1999
- Royal Botanic Gardens and Domain Trust, PlantNET (The NSW Plant Information Network System), Sydney. https://plantnet.rbgsyd.nsw.gov.au, accessed 02/04/2021
- Royal Botanic Gardens Board Victoria, "VicFlora", https://vicflora.rbg.vic.gov.au/, accessed 02-04/2021
- State Government of Victoria, "Conservation Status Assessment Project- List of taxa including preliminary Victorian assessments" (Accessed online at: "Conservation Status Assessment Project", https://www.environment.vic.gov.au/conserving-threatened-species/conservation-status-assessment-project, State Government of Victoria, accessed 02/04/2021)
- State Government of Victoria, "Advisory list of rare or threatened plants in Victoria – 2014", The State of Victoria Department of Environment and Primary Industries, 2014. (Accessed online at: "Threatened Species Advisory Lists" https://www.environment.vic.gov.au/conserving-threatened-species/threatened-species-advisory-lists, State Government of Victoria, accessed 02/04/2021)
- State Government of Victoria, "Spatial Datamart" (various spatial data files), http://services.land.vic.gov.au/SpatialDatamart/, accessed 02-04/2021
- White, M., Bhatpurev, K., Salkin, O. and Newell G., Primary Rainforest Mapping in Victoria 2018 - extent and type, Arthur Rylah Institute Technical Report Series No. 309, Arthur Rylah Institute for Environmental Research, Department of Environment, Land, Water and Planning, Heidelberg, Victoria, 2019
- White, M., Cheal, D., Carr, G. W., Adair, R., Blood, K. and Meagher, D. Advisory list of environmental weeds in Victoria. Arthur Rylah Institute for Environmental Research Technical Report Series No. 287. Department of Environment, Land, Water and Planning, Heidelberg, Victoria, 2018

Figure 232: Funghi in rainforest leaf litter (Hensleigh – Far Creek RFSOS)

Figure 233: Funghi in rainforest leaf litter (Hensleigh – Far Creek RFSOS)

Spatial data on weeds, deer and rare plants available upon request from: tomcrook@egcmn.org.au