

## INVESTIGATION REPORT

# HIGH DENSITY RECORDING OF GREATER GLIDERS (*Petauroides volans*)

## COTTONWOOD RANGE ROAD & BUMPERBAR TRACK

### VicForests' Logging Coupes:

895-505-0008, 895-505-0011, 895-505-0015, 895-510-0009, 895-510-0012, 895-511-0005, 895-511-0006, 895-511-0008, 895-511-0009, 895-511-0010, 895-511-0011, and 895-511-0012

### Abstract

Forest areas within and/or adjacent to VicForests scheduled logging coupes 895-505-0008, 895-505-0011, 895-505-0015, 895-510-0009, 895-510-0012, 895-511-0005, 895-511-0006, 895-511-0008, 895-511-0009, 895-511-0010, 895-511-0011, and 895-511-0012 were investigated to assess the presence and density of Greater Glider (*Petauroides volans*) individuals and other nocturnal fauna.

High numbers of Greater Glider (*Petauroides volans*) individuals were recorded from this location during a series of nocturnal spotlighting surveys.

The Greater Glider (*Petauroides volans*) records obtained within the various “survey transects” of this investigation were assessed using spatial analysis with many supporting densities requiring protection under the relevant mandatory biodiversity conservation measures set out in the regulatory framework governing logging operations in Victoria's State Forests.

Recommendations are made to the Department of Environment, Land, Water and Planning (DELWP) and to VicForests to ensure that the areas of high Greater Glider (*Petauroides volans*) densities are protected from logging through their inclusion in the “Special Protection Zone” of the “Forest Management Zone Scheme”. The methodology, results, discussion and recommendations arising from this investigation are further detailed within this report.

### Relevant Legislation

- Code of Practice for Timber Production 2014, Department of Environment and Primary Industries, The State of Victoria, 2014
- “Management Standards and Procedures for timber harvesting operations in Victoria's State forests 2014”, Department of Environment and Primary Industries, The State of Victoria, 2014
- “Planning Standards for timber harvesting operations in Victoria's State forests 2014, Appendix 5 to the Management Standards and Procedures for timber harvesting operations in Victoria's State forests 2014”, Department of Environment and Primary Industries, The State of Victoria, 2014
- Forest Management Plan For The East Gippsland Forest Management Area, Victoria Department of Conservation and Natural Resources, East Melbourne, December 1995

### Relevant Organisations

- VicForests

Forest areas under investigation remain scheduled for logging.

### Status of Site

#### Date of Investigation

27/09/2015; 30/09/2015;  
01/10/2015; 03/10/2015;  
04/10/2015

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#### Date of report

18/03/2016





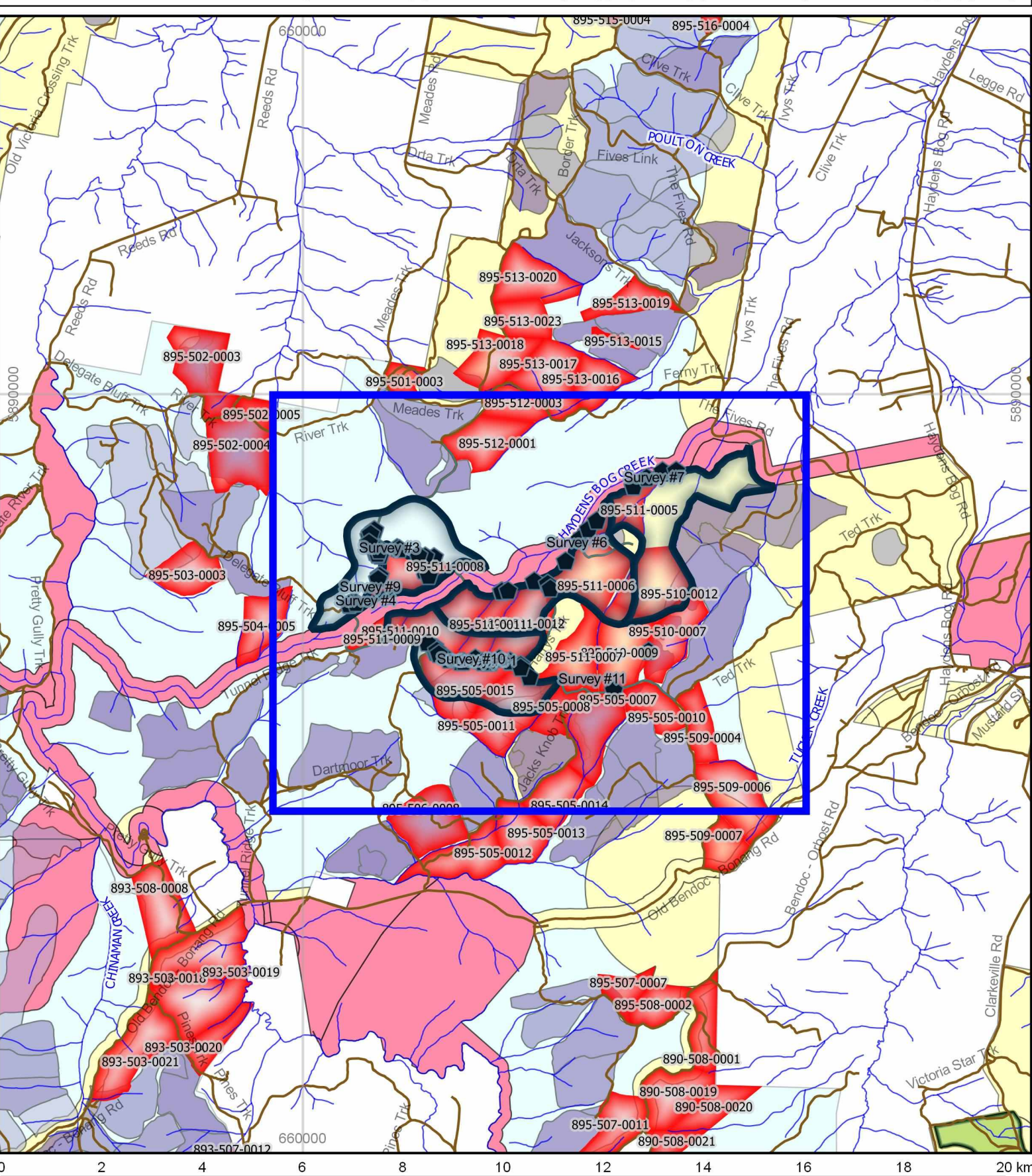


Within multiple VicForests scheduled logging coupes off Cottonwood Range Road and Bumperbar Track in the Cottonwood Forest Block near Bendoc in East Gippsland.

160318 - Cottonwood Range Road &amp; Bumperbar Track - High Densities of Greater Gliders - AL FFRC-GECO 3/24



Figure A(ii). Study Location Overview - Cottonwood Range Road; Nocturnal Fauna Detection records; High Density Greater Glider Areas & Protection Zones; Forest Management Zoning [DEPI, June, 2014]; Logging History [LASTLOG25]; Scheduled Logging [TRP]



**Legend**

Greater Glider Record	<b>Forest Management Zones</b> [Selected from FMZ100 DEPI; June 2014]	Parks and Reserves [PARKRES]
High Density Greater Glider Area	Code of Forest Practice	Roads
100ha Special Protection Zone for High Density Greater Glider Area	Conservation Parks and Reserves	Watercourses
Scheduled logging Coupes Timber Release plan (TRP) [VicForests: August 2015]	Special Protection Zone	Contours
	Special Management Zone	
	General Management Zone	

Prior Logging  
History [2014:  
LASTLOG25]

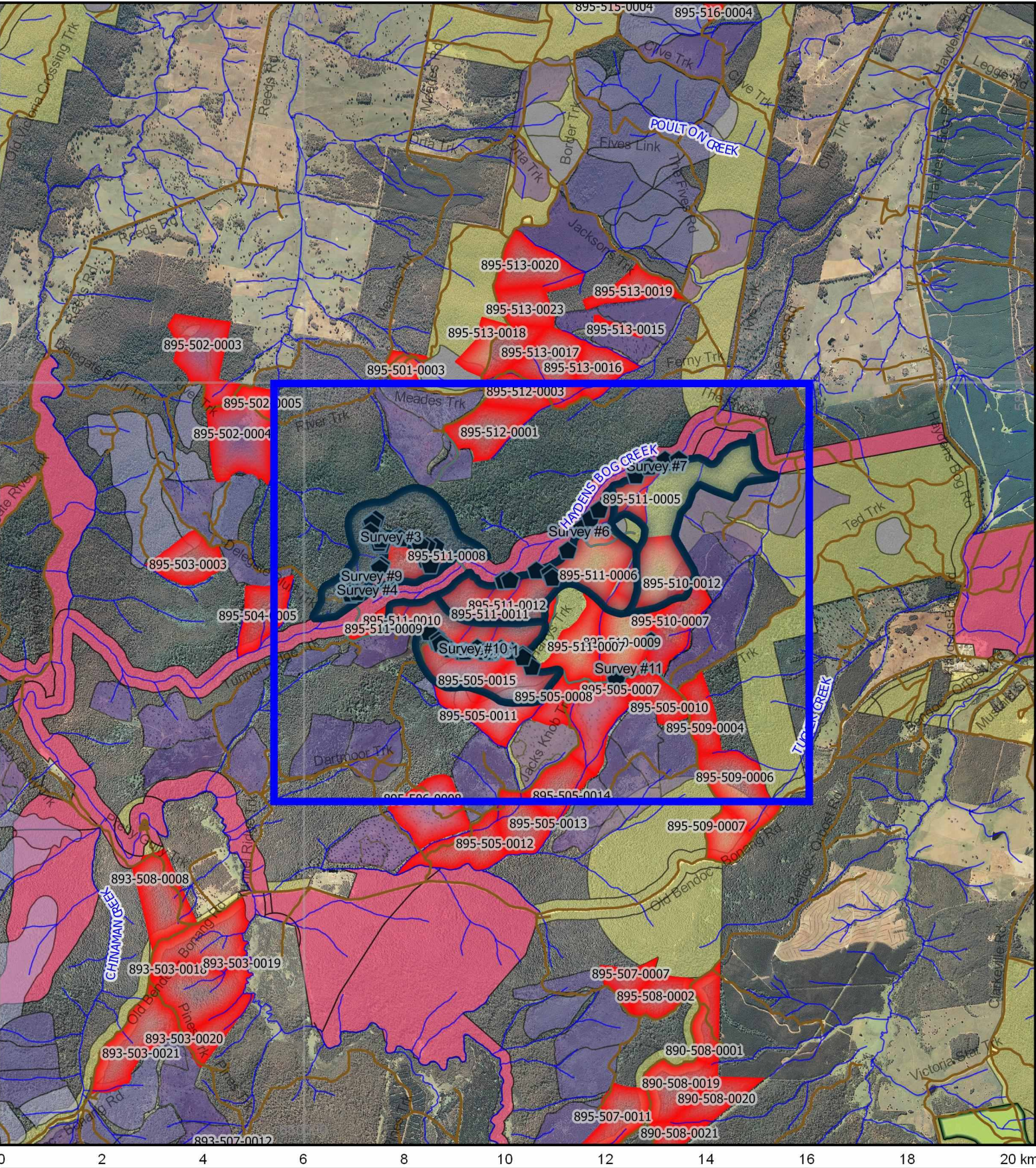
195960
196970
197980
198990
199900
200910
201314

Projection: EPSG: 28355  
GDA94/MGA Zone 55

Map Scale:  
1:50,000



Figure A(iii). Study Location Overview - Cottonwood Range Road; Nocturnal Fauna Detection records; High Density Greater Glider Areas & Protection Zones; Forest Management Zoning [DEPI, June, 2014]; Logging History [LASTLOG25]; Scheduled Logging [TRP]



Legend

- Greater Glider Record
- High Density Greater Glider Area
- 100ha Special Protection Zone for High Density Greater Glider Area
- Scheduled logging Coupes Timber Release plan (TRP) [VicForests: August 2015]
- Forest Management Zones [Selected from FMZ100 DEPI; June 2014]
- Code of Forest Practice
- Conservation Parks and Reserves
- Special Protection Zone
- Special Management Zone
- General Management Zone
- Parks and Reserves [PARKRES]
- Roads
- Watercourses
- Contours

- Prior Logging History [2014: LASTLOG25]
- 195960
  - 196970
  - 197980
  - 198990
  - 199900
  - 200910
  - 201314

Projection: EPSG: 28355  
GDA94/MGA Zone 55

Map Scale:  
1:50,000



## **Method 1 (Nocturnal Fauna Spotlighting Survey)**

Nocturnal Fauna Surveys [27/09/2015; 30/09/2015; 01/10/2015; 03/10/2015; 04/10/2015]

### *Equipment Used*

- Hand-held Spotlight
- Binoculars
- Digital Camera
- Global Positioning System (GPS)  
[Garmin GPSMAP 62s]
- Compass, pen and paper

### *Method - General*

1. On each of the dates listed above spotlighting survey transects were commenced at various times listed below in the relevant Tables of the Results 3. section along Cottonwood Range Road and/or Bumperbar Track in the Cottonwood Forest Block to the West of Bendoc in East Gippsland.
2. The forest adjacent to (visible from) Cottonwood Range Road and/or Bumperbar Track (and occasionally from within the forest) was searched for the presence of nocturnal fauna principally by shining a hand-held spotlight to detect fauna movement or “eye shine”.
3. As fauna were observed their locations were marked with a GPS and time, species, bearing from and a rough estimate of the distance from observation location were noted.

**See the Tables in “Results 3” below for details of the fauna encountered.**

4. Fauna record location data were analysed using Geographic Information Systems (GIS) mapping software to determine compliance requirements with the regulatory framework governing logging operations in Victoria's State Forest with respect to fauna detection based biodiversity conservation measures.
5. Further presentation of these results, as well as conclusions and discussion arising from this investigations results are provided in their relevant sections below.



## Method 2 (analysis/recommendations/legislation considered [as at August 2015])

From: “Management Standards and Procedures for timber harvesting operations in Victoria’s State forests 2014”, Department of Environment and Primary Industries, The State of Victoria, 2014.<sup>1</sup>

### “2. Planning and Record Keeping

#### 2.1 FMZ and planning information

2.1.1.3 Where evidence of a value that requires protection via the establishment or amendment of an SPZ or SMZ is found in the field application must be made to the Secretary or delegate prior to commencement of the timber harvesting operation to create or amend an SPZ or SMZ in accordance with Appendix 5 the Planning Standards. SMZ applications must be accompanied by an SMZ plan and must be complied with during timber harvesting operations.

### 4. Biodiversity

#### 4.2 Fauna

4.2.1.1 Apply management actions for rare and threatened fauna identified within areas affected by timber harvesting operations as outlined in Appendix 3 Table 13 (Rare or threatened fauna prescriptions).

**Table 13 Rare or threatened fauna and invertebrate prescriptions.**

FMA	Common name	Scientific name	Management action
East Gippsland	Greater Glider	<i>Petauroides volans</i>	Where evidence of this value is found in the field follow clause 2.1.1.3 of this document using table 4 in Appendix 5 the Planning Standards for information.

From: “Planning Standards for timber harvesting operations in Victoria’s State forests 2014, Appendix 5 to the Management Standards and Procedures for timber harvesting operations in Victoria’s State forests 2014”<sup>2</sup>

### “4. Biodiversity

#### 4.2 Fauna – fixed zoning

##### 4.2.1 Statewide

4.2.1.1 Plan management actions for rare and endangered fauna in accordance with Table 3 (Fixed FMZ rules for fauna) below.

4.2.1.2 Maintain FMZ schemes for rare and endangered fauna in accordance with Table 3 (Fixed FMZ rules for fauna) below.

#### 4.3 Fauna - detection based zoning

##### 4.3.1 Statewide

4.3.1.1 Apply the management actions outlined in Table 4 (Detection based FMZ rules for fauna) below for zoned rare or threatened fauna.

4.3.1.2 Implement FMZ amendments and reviews in accordance with Table 4 (Detection based FMZ rules for fauna) below for new verified rare or threatened fauna records and FMZ amendment requirements outlined in section 2.

**Table 4 Detection based FMZ rules for fauna.**

FMA	Common name	Scientific name	Zoning management actions	Management actions	Review
East Gippsland	Greater Glider	<i>Petauroides volans</i>	Establish a SPZ of approximately 100 ha of suitable habitat where verified records report more than 2 individuals per hectare, more than 10 individuals per km or more than 15 individuals per hour of spotlighting, or where substantial populations are located in isolated or unusual habitat.		

1 “Management Standards and Procedures for timber harvesting operations in Victoria’s State forests 2014”, Department of Environment and Primary Industries, The State of Victoria, 2014, p. 23, 32, 36, 76, 79

2 “Planning Standards for timber harvesting operations in Victoria’s State forests 2014, Appendix 5 to the Management Standards and Procedures for timber harvesting operations in Victoria’s State forests 2014”, Department of Environment and Primary Industries, The State of Victoria, 2014, pp. 16, 17, 20, 43



From: “Forest Management Plan For The East Gippsland Forest Management Area, Victoria Department of Conservation and Natural Resources, East Melbourne, December 1995”.<sup>3</sup>

## **“Chapter 3 BIODIVERSITY CONSERVATION**

### **3.4 - NATIVE FAUNA**

#### **CONSERVATION GUIDELINE Mammals**

Arboreal mammals. For each of the following occurrences, approximately 100 ha of suitable habitat will be included in the SPZ:

- resident Koala populations.
- Greater Glider and Common Brushtail Possum - >2 individuals per ha, >10 per km, or >15 per hour of spotlighting.
- Yellow-bellied Glider - >0.2 per ha, >5 per km, or >7 per hour of spotlighting.
- Eastern Pygmy Possum - >5 per standard pitfall line over 5 days.
- substantial populations of the above species that are isolated or in unusual habitat.



<sup>3</sup> Forest Management Plan For The East Gippsland Forest Management Area, Victoria Department of Conservation and Natural Resources, East Melbourne, December 1995, p. 12, 27, 29, 30

## Results Summary – Nocturnal Spotlighting Survey Results

### Results 1 (Tables and Maps)

This section shows 11 Tables that present the summarised results from each of 11 spotlighting surveys undertaken within the study location. These Tables include 8 surveys generating protection measures for “High densities of Greater Gliders”.

Following each of the Tables detailed above is a map spatially displaying the preceding Table's Greater Glider detection records, the “High Density of Greater Glider” area that they form, and the four 100ha Special Protection Zones to be included in the Forest Management Zone Scheme subsequent to these “High Density of Greater Glider” area detections.

Note: Not all Surveys shown in the following Tables constitute “High Density of Greater Glider”.

See this report's Methods and Discussion sections for further details.

Summary Table of Results 1 (Tables and Maps):

Table No.	Map No.	Survey Name	Number of Greater Gliders Detected	High Densities of Greater Gliders Generating Protection Measure?
Table 1.	Figure 1.	“Survey #1 – Cottonwood Range Road (south) – 27/09/2015”	8	YES
Table 2.	Figure 2.	“Survey #2 – Cottonwood Range Road (south) – 30/09/2015”	6	
Table 3.	Figure 2.	“Survey #3 – Cottonwood Range Road (center)/Bumperbar Track – 30/09/2015-01/10/2015”	12	YES
Table 4.	Figure 3.	“Survey #4 – Cottonwood Range Road (center)/Bumperbar Track (west) – 03/10/2015”	9	YES
Table 5.	Figure 3.	“Survey #5 – Cottonwood Range Road (south) – 03/10/2015”	5	YES
Table 6.	Figure 4.	“Survey #6 – Bumperbar Track (centre)/Harry's Track – 03/10/2015-04/10/2015”	10	YES
Table 7.	Figure 5.	“Survey #7 – Bumperbar Track (north) – 04/10/2015”	6	YES
Table 8.	Figure 5.	“Survey #8 – Bumperbar Track (west)/in Coupe: 895-511-0008 – 04/10/2015”	4	
Table 9.	Figure 5.	“Survey #9 – Cottonwood Range Road (centre) – 04/10/2015”	7	YES
Table 10.	Figure 5.	“Survey #10 – Cottonwood Range Road (south) – 04/10/2015”	9	YES
Table 11.	Figure 5.	“Survey #11 – Cottonwood Range Road (south)/Ted's Track – 04/10/2015”	2	

### Results 2 (Photos)

The “Results 1. (Photos)” section presents photographs of Greater Glider (*Petauroides volans*) individuals encountered and photographed throughout the study location and recorded within the “Surveys” (Spotlighting Transects) detailed above.



## Results 2 – Tables and Maps

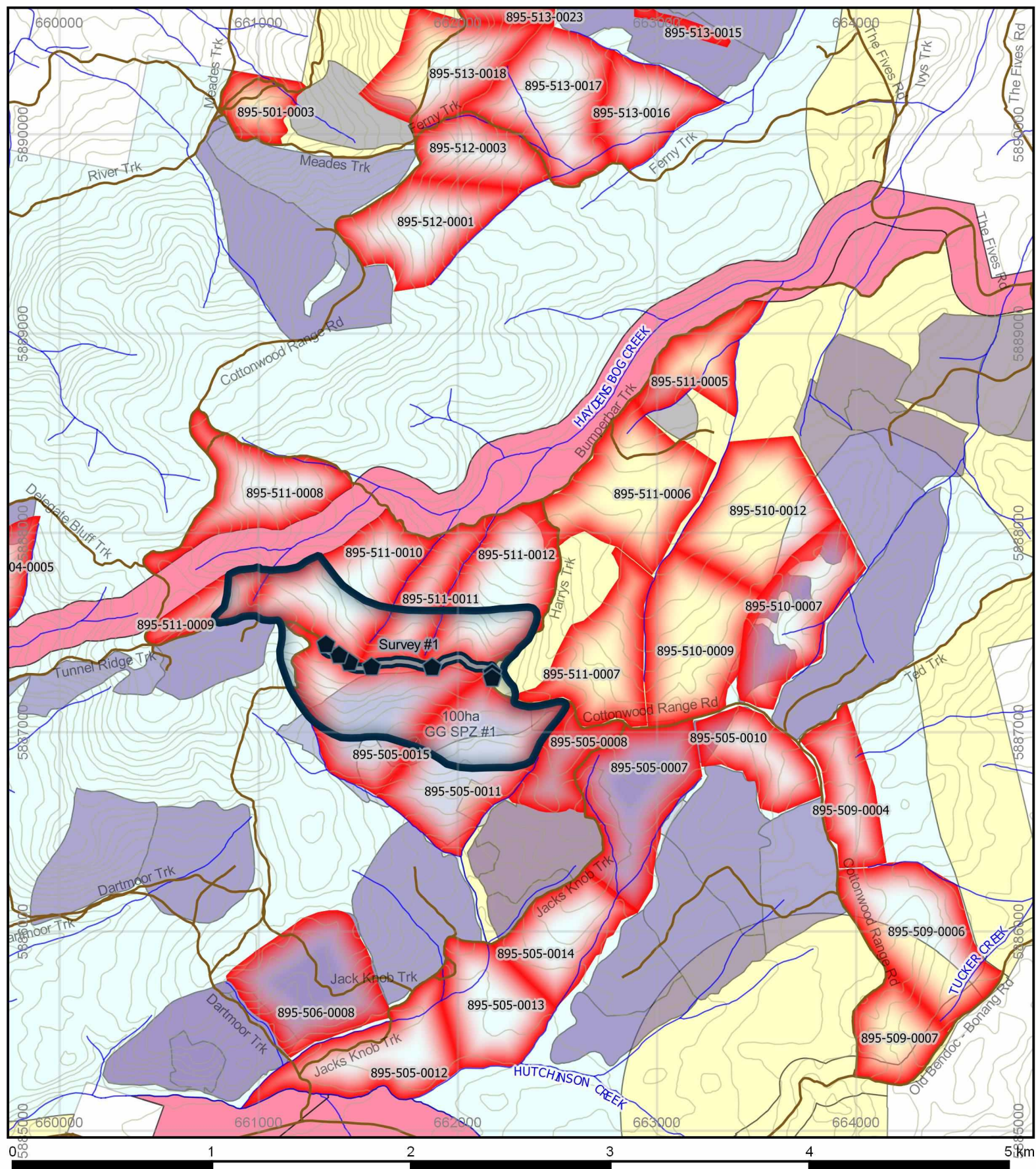
Table 1. "Survey #1 – Cottonwood Range Road (south) – 27/09/2015"

Time	Common Name	Specific Name	Abb.	Type	Location (GDA94 UTM)	Bearing	Distance
19:22	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 662171 5887270	219°	30
19:28	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 662172 5887295	240°	25
19:46	Yellow-bellied Glider	<i>Petaurus australis</i>	YBG	Visual	55 H 662015 5887371	222°	25
19:55	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661870 5887324	167°	20
19:55	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661870 5887324	167°	20
20:17	Common Ringtail Possum	<i>Pseudocheirus peregrinus</i>	CRT	Visual	55 H 661702 5887365	320°	15
20:30	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661566 5887326	252°	15
20:39	Mountain Brushtail Possum	<i>Trichosurus cunninghami</i>	MbtP	Visual	55 H 661527 5887327	326°	10
20:45	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661454 5887349	220°	15
20:45	Mountain Brushtail Possum	<i>Trichosurus cunninghami</i>	MbtP	Visual	55 H 661454 5887349	220°	15
20:54	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661402 5887385	254°	15
20:58	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661337 5887439	16°	25





Figure 1. Cottonwood Range Road; Nocturnal Fauna Spotlighting Detection records; High Density Greater Glider Areas and Protection Zones; Forest Management Zoning [DEPI, June, 2014]; Logging History [LASTLOG25]; Scheduled Logging [TRP]



### Legend

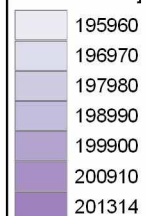
-  Greater Glider Record
-  High Density Greater Glider Area
-  100ha Special Protection Zone for High Density Greater Glider Area
-  Scheduled logging Coupes
-  Timber Release plan (TRP)  
[VicForests: August 2015]

Forest Management Zones  
[Selected from FMZ100  
DEPI; June 2014]

-  Special Protection Zone  
 Special Management Zone  
 General Management Zone

- Roads
- Watercourses
- Contours

Prior Logging  
History [2014:  
LASTLOG25]



Projection: EPSG: 28355  
GDA94/MGA Zone 55

Map Scale:  
1:25,000





Table 2. "Survey #2 – Cottonwood Range Road (south) – 30/09/2015"

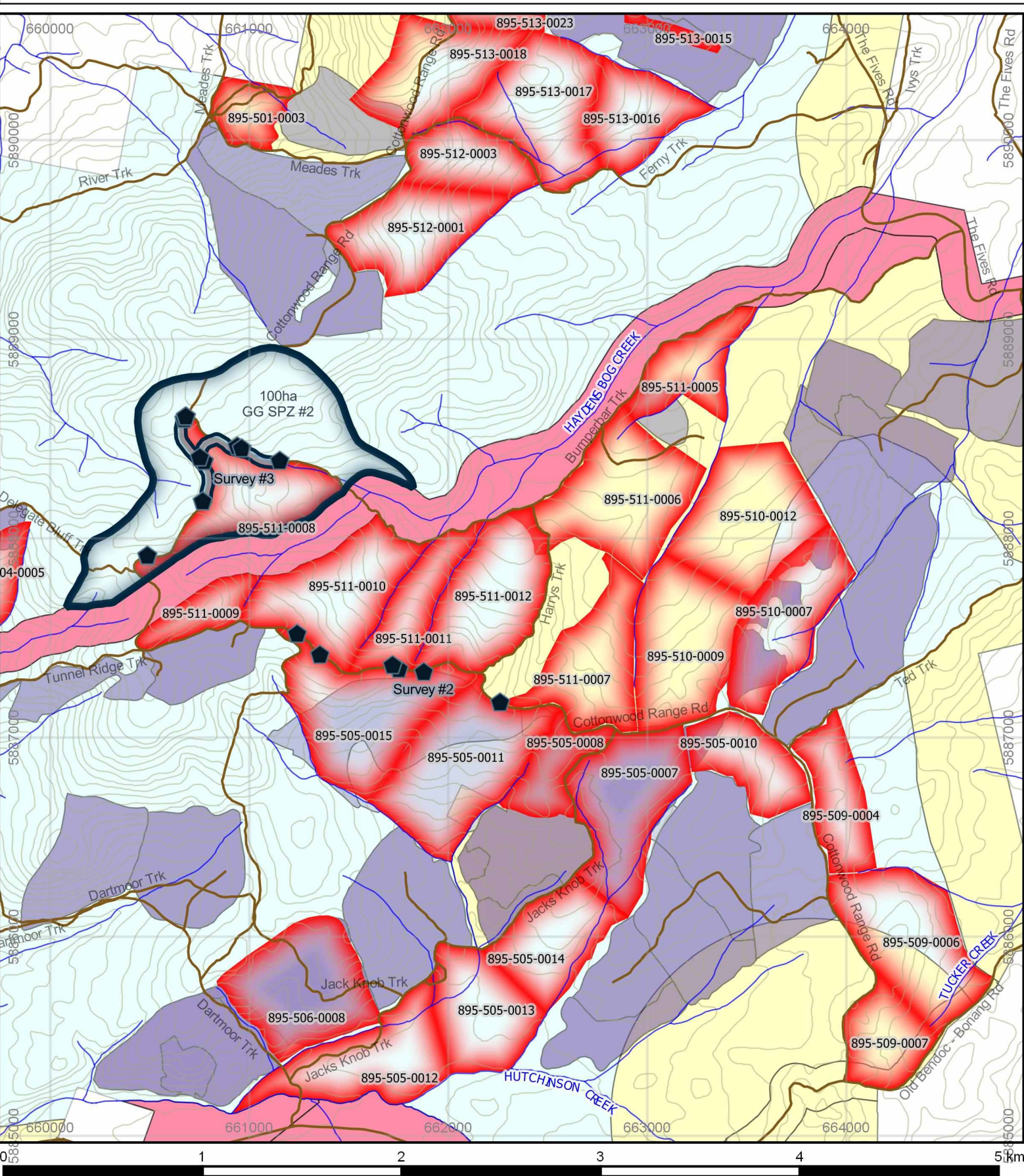
Time	Common Name	Specific Name	Abb.	Type	Location (GDA94 UTM)	Bearing	Distance
20:25	Sooty Owl	<i>Tyto tenebricosa</i>	SO	Visual	55 H 662343 5887145	210°	30m
20:32	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 662260 5887174	330°	50m
20:47	Mountain Brushtail Possum	<i>Trichosurus cunninghami</i>	MbtP	Visual	55 H 661974 5887354	180°	15m
20:49	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661876 5887327	270°	5m
20:51	Southern Boobook Owl	<i>Ninox novaeseelandiae</i>	SBB	Aural	55 H 661874 5887320	190°	200m
20:58	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661751 5887342	220°	60m
21:03	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661719 5887361	290°	50m
21:23	<i>Arboreal Mammal Species not confirmed</i>		?	Visual	55 H 661620 5887344	330°	10m
21:26	Mountain Brushtail Possum	<i>Trichosurus cunninghami</i>	MbtP	Visual	55 H 661537 5887303	220°	20m
21:36	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661354 5887413	350°	70m
21:42	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661239 5887518	330°	20m

Table 3. "Survey #3 – Cottonwood Range Road (center)/Bumperbar Track – 30/09/2015-01/10/2015"

Time	Common Name	Specific Name	Abb.	Type	Location (GDA94 UTM)	Bearing	Distance
22:20	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 660487 5887911	20°	30m
22:20	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 660487 5887911	20°	30m
22:27	Mountain Brushtail Possum	<i>Trichosurus cunninghami</i>	MbtP	Visual	55 H 660625 5887964	80°	10m
22:30	Mountain Brushtail Possum	<i>Trichosurus cunninghami</i>	MbtP	Visual	55 H 660627 5888007	320°	20m
22:32	Sugar Glider	<i>Petaurus breviceps</i>	SG	Aural	55 H 660635 5888009	50°	150m
22:35	Mountain Brushtail Possum	<i>Trichosurus cunninghami</i>	MbtP	Aural	55 H 660689 5888093	50°	60m
22:37	Common Ringtail Possum	<i>Pseudocheirus peregrinus</i>	CRT	Visual	55 H 660684 5888091	270°	10m
22:45	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 660765 5888184	230°	30m
22:45	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 660765 5888184	230°	30m
22:49	Southern Boobook Owl	<i>Ninox novaeseelandiae</i>	SBB	Aural	55 H 660753 5888197	60°	200m
22:50	Sugar Glider	<i>Petaurus breviceps</i>	SG	Aural	55 H 660763 5888191	90°	150m
22:50	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 660771 5888386	260°	30m
23:00	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 660750 5888405	40°	60m
23:12	<i>Arboreal Mammal Species not confirmed</i>		?	Visual	55 H 660767 5888469	270°	0m
23:17	Mountain Brushtail Possum	<i>Trichosurus cunninghami</i>	MbtP	Visual	55 H 660878 5888474	240°	200m
23:20	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 660939 5888460	40°	60m
23:22	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 660961 5888450	70°	30m
23:25	Mountain Brushtail Possum	<i>Trichosurus cunninghami</i>	MbtP	Visual	55 H 661023 5888437	50°	5m
23:25	Mountain Brushtail Possum	<i>Trichosurus cunninghami</i>	MbtP	Visual	55 H 661025 5888436	150°	10m
23:26	Mountain Brushtail Possum	<i>Trichosurus cunninghami</i>	MbtP	Visual	55 H 661065 5888396	160°	200m
23:31	Mountain Brushtail Possum	<i>Trichosurus cunninghami</i>	MbtP	Visual	55 H 661106 5888390	90°	10m
23:35	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661152 5888388	110°	30m
23:45	Mountain Brushtail Possum	<i>Trichosurus cunninghami</i>	MbtP	Visual	55 H 661305 5888378	100°	10m
23:46	Sugar Glider	<i>Petaurus breviceps</i>	SG	Aural	55 H 661305 5888378	230°	150m
00:24	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 660672 5888597	230°	150m
00:27	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 660680 5888610	90°	25m
00:27	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 660680 5888610	90°	25m
00:31	Yellow-bellied Glider	<i>Petaurus australis</i>	YBG	Aural	55 H 660678 5888608	270°	150m
00:32	Yellow-bellied Glider	<i>Petaurus australis</i>	YBG	Aural	55 H 660678 5888608	340°	80m



Figure 2. Cottonwood Range Road; Nocturnal Fauna Spotlighting Detection records; High Density Greater Glider Areas and Protection Zones; Forest Management Zoning [DEPI, June, 2014]; Logging History [LASTLOG25]; Scheduled Logging [TRP]



**Legend**

- Greater Glider Record
- High Density Greater Glider Area
- 100ha Special Protection Zone for High Density Greater Glider Area
- Scheduled logging Coupes

**Forest Management Zones**  
[Selected from FMZ100 DEPI; June 2014]

- Special Protection Zone
- Special Management Zone
- General Management Zone

**Roads**

**Watercourses**

**Contours**

**Prior Logging History [2014: LASTLOG25]**

- 195960
- 196970
- 197980
- 198990
- 199900
- 200910
- 201314

**Projection: EPSG: 28355 GDA94/MGA Zone 55**

**Map Scale: 1:25,000**

**North Arrow**



Table 4. "Survey #4 – Cottonwood Range Road (center)/Bumperbar Track (west) – 03/10/2015"

Time	Common Name	Specific Name	Abb.	Type	Location (GDA94 UTM)	Bearing	Distance
00:10	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 660458 5887900	90°	5m
00:12	Common Ringtail Possum	<i>Pseudocheirus peregrinus</i>	CRT	Visual	55 H 660515 5887908	350°	10m
00:13	Mountain Brushtail Possum	<i>Trichosurus cunninghami</i>	MbtP	Visual	55 H 660505 5887907	320°	0m
00:14	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 660527 5887914	300°	20m
00:18	Southern Boobook Owl	<i>Ninox novaeseelandiae</i>	SBB	Aural	55 H 660530 5887912	320°	300m
00:19	Mountain Brushtail Possum	<i>Trichosurus cunninghami</i>	MbtP	Visual	55 H 660584 5887932	320°	0m
00:19	Mountain Brushtail Possum	<i>Trichosurus cunninghami</i>	MbtP	Aural	55 H 660584 5887932	290°	30m
00:22	Common Ringtail Possum	<i>Pseudocheirus peregrinus</i>	CRT	Visual	55 H 660618 5887972	330°	15m
00:22	Common Ringtail Possum	<i>Pseudocheirus peregrinus</i>	CRT	Visual	55 H 660618 5887972	330°	15m
00:25	Common Ringtail Possum	<i>Pseudocheirus peregrinus</i>	CRT	Visual	55 H 660652 5888038	280°	20m
00:29	Yellow-bellied Glider	<i>Petaurus australis</i>	YBG	Visual	55 H 660698 5888105	280°	25m
00:33	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 660720 5888134	300°	10m
00:36	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 660750 5888153	340°	10m
00:36	Yellow-bellied Glider	<i>Petaurus australis</i>	YBG	Visual	55 H 660750 5888153	340°	10m
00:46	Mountain Brushtail Possum	<i>Trichosurus cunninghami</i>	MbtP	Aural	55 H 660766 5888391	10°	100m
00:50	Greater Glider	<i>Petauroides volans</i>	GG	Aural	55 H 660695 5888459	0°	50m
00:51	Mountain Brushtail Possum	<i>Trichosurus cunninghami</i>	MbtP	Visual	55 H 660659 5888500	300°	30m
00:55	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 660656 5888534	310°	30m
01:01	Australian Owlet-nightjar	<i>Aegotheles cristatus</i>	AOJ	Visual	55 H 660662 5888577	310°	10m
01:01	Yellow-bellied Glider	<i>Petaurus australis</i>	YBG	Aural	55 H 660662 5888577	130°	100m
01:01	Southern Boobook Owl	<i>Ninox novaeseelandiae</i>	SBB	Aural	55 H 660662 5888577	60°	100m
01:02	Greater Glider	<i>Petauroides volans</i>	GG	Aural	55 H 660662 5888577	20°	200m
01:12	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 660712 5888641	110°	40m
01:45	*Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 660676 5888602	260°	15m
01:47	*Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 660658 5888513	310°	10m
01:53	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 660743 5888404	190°	20m
01:56	Common Ringtail Possum	<i>Pseudocheirus peregrinus</i>	CRT	Visual	55 H 660743 5888404	250°	0m
01:56	Yellow-bellied Glider	<i>Petaurus australis</i>	YBG	Aural	55 H 660743 5888404	350°	100m
01:58	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 660759 5888438	80°	40m
02:08	Mountain Brushtail Possum	<i>Trichosurus cunninghami</i>	MbtP	Visual	55 H 660922 5888459	20°	20m
02:22	Southern Boobook Owl	<i>Ninox novaeseelandiae</i>	SBB	Visual	55 H 661231 5888374	110°	30m
02:34	Mountain Brushtail Possum	<i>Trichosurus cunninghami</i>	MbtP	Visual	55 H 661356 5888351	190°	10m
02:40	Mountain Brushtail Possum	<i>Trichosurus cunninghami</i>	MbtP	Visual	55 H 661465 5888280	60°	10m

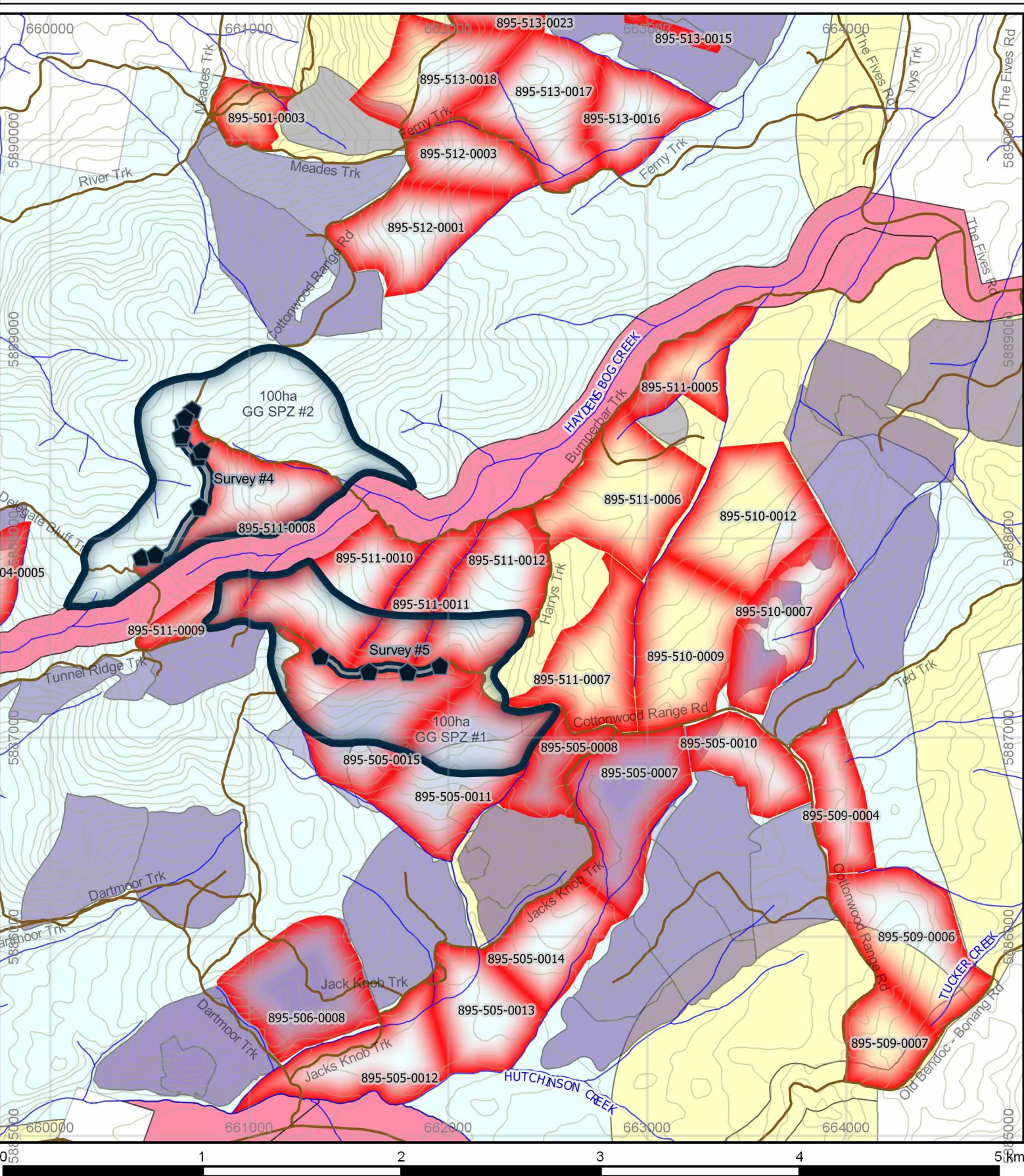
\*Not included in High Density Greater Glider assessment (individuals previously recorded and noted again to ensure non-duplicate records in count)

Table 5. "Survey #5 – Cottonwood Range Road (south) – 03/10/2015"

Time	Common Name	Specific Name	Abb.	Type	Location (GDA94 UTM)	Bearing	Distance
23:52	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661958 5887357	130°	20m
23:56	Common Ringtail Possum	<i>Pseudocheirus perigrinus</i>	CRT	Visual	55 H 661904 5887325	170°	20m
00:02	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661795 5887324	170°	10m
00:02	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661795 5887324	170°	10m
00:04	Mountain Brushtail Possum	<i>Trichosurus cunninghami</i>	MbtP	Visual	55 H 661780 5887336	180°	15m
00:07	Southern Boobook Owl	<i>Ninox novaeseelandiae</i>	SBB	Aural	55 H 661697 5887348	310°	100m
00:12	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661600 5887327	140°	20m
00:12	Sugar Glider	<i>Petaurus breviceps</i>	SG	Aural	55 H 661600 5887327	275°	60m
00:12	Southern Boobook Owl	<i>Ninox novaeseelandiae</i>	SBB	Aural	55 H 661600 5887327	270°	100m
00:16	Mountain Brushtail Possum	<i>Trichosurus cunninghami</i>	MbtP	Visual	55 H 661552 5887312	170°	5m
00:23	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661355 5887404	380°	40m
00:35	Mountain Brushtail Possum	<i>Trichosurus cunninghami</i>	MbtP	Visual	55 H 661148 5887561	190°	10m
00:47	Mountain Brushtail Possum	<i>Trichosurus cunninghami</i>	MbtP	Visual	55 H 660753 5887530	170°	5m
00:52	Sugar Glider	<i>Petaurus breviceps</i>	SG	Visual	55 H 660644 5887485	180°	5m



Figure 3. Cottonwood Range Road; Nocturnal Fauna Spotlighting Detection records; High Density Greater Glider Areas and Protection Zones; Forest Management Zoning [DEPI, June, 2014]; Logging History [LASTLOG25]; Scheduled Logging [TRP]



**Legend**

- Greater Glider Record
- High Density Greater Glider Area
- 100ha Special Protection Zone for High Density Greater Glider Area
- Scheduled logging Coupes Timber Release plan (TRP) [VicForests: August 2015]

**Forest Management Zones**  
[Selected from FMZ100 DEPI; June 2014]

- Special Protection Zone
- Special Management Zone
- General Management Zone

**Roads**

**Watercourses**

**Contours**

**Prior Logging History [2014: LASTLOG25]**

- 195960
- 196970
- 197980
- 198990
- 199900
- 200910
- 201314

**Projection:** EPSG: 28355 GDA94/MGA Zone 55

**Map Scale:** 1:25,000

**North Arrow**



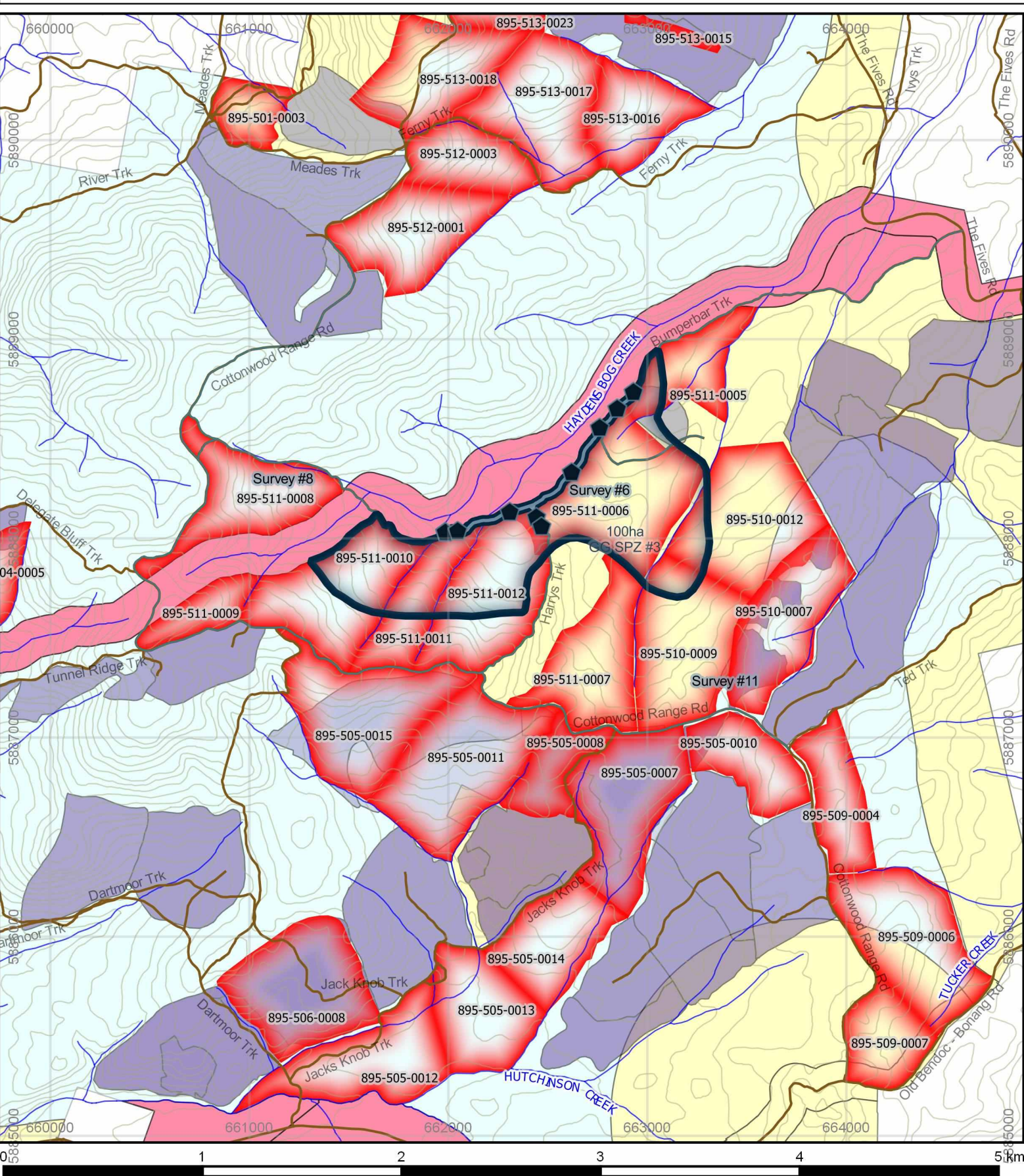
Table 6. "Survey #6 – Bumperbar Track (centre)/Harry's Track – 03/10/2015-04/10/2015"

Time	Common Name	Specific Name	Abb.	Type	Location (GDA94 UTM)	Bearing	Distance
22:21	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661984 5888029	340°	1m
22:21	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661984 5888029	140°	5m
22:21	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661984 5888029	140°	5m
22:31	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 662046 5888035	200°	10m
22:42	Mountain Brushtail Possum	<i>Trichosurus cunninghami</i>	MbtP	Visual	55 H 662085 5888040	80°	20m
22:42	Mountain Brushtail Possum	<i>Trichosurus cunninghami</i>	MbtP	Visual	55 H 662085 5888040	80°	20m
22:53	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 662308 5888131	120°	15m
23:02	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 662441 5888105	80°	20m
23:05	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 662467 5888058	60°	20m
23:37	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 662619 5888330	100°	15m
23:49	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 662760 5888553	280°	20m
00:09	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 662848 5888650	340°	40m
00:09	Southern Boobook Owl	<i>Ninox novaeseelandiae</i>	SBB	Aural	55 H 662848 5888650	100°	200m
00:16	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 662930 5888733	70°	30m





Figure 4. Cottonwood Range Road; Nocturnal Fauna Spotlighting Detection records; High Density Greater Glider Areas and Protection Zones; Forest Management Zoning [DEPI, June, 2014]; Logging History [LASTLOG25]; Scheduled Logging [TRP]



**Legend**

- Greater Glider Record
- High Density Greater Glider Area
- 100ha Special Protection Zone for High Density Greater Glider Area
- Scheduled logging Coupes Timber Release plan (TRP) [VicForests: August 2015]

**Forest Management Zones**  
[Selected from FMZ100 DEPI; June 2014]

- Special Protection Zone
- Special Management Zone
- General Management Zone

**Roads**

- Watercourses
- Contours

**Prior Logging History [2014: LASTLOG25]**

195960
196970
197980
198990
199900
200910
201314

**Projection: EPSG: 28355 GDA94/MGA Zone 55**

**Map Scale: 1:25,000**



Table 7. "Survey #7 – Bumperbar Track (north) – 04/10/2015"

Time	Common Name	Specific Name	Abb.	Type	Location (GDA94 UTM)	Bearing	Distance
00:16	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 662930 5888733	70°	30m
00:55	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 663297 5889075	350°	30m
00:55	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 663297 5889075	350°	30m
00:55	Southern Boobook Owl	<i>Ninox novaeseelandiae</i>	SBB	Visual	55 H 663297 5889075	100°	20m
01:02	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 663428 5889162	320°	30m
01:07	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 663428 5889162	270°	20m
01:15	Feathertail Glider	<i>Acrobates pygmaeus</i>	FTG	Visual	55 H 663482 5889185	170°	5m
01:21	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 663586 5889229	30°	15m
01:27	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 663722 5889233	20°	20m
02:28	Yellow-bellied Glider	<i>Petaurus australis</i>	YBG	Aural	55 H 663722 5889233	250°	200m

Table 8. "Survey #8 – Bumperbar Track (west)/in Coupe: 895-511-0008 – 04/10/2015"

Time	Common Name	Specific Name	Abb.	Type	Location (GDA94 UTM)	Bearing	Distance
20:43	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661207 5888237	N/A	0m
20:52	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661254 5888184	N/A	0m
20:52	Mountain Brushtail Possum	<i>Trichosurus cunninghami</i>	MbtP	Visual	55 H 661254 5888184	N/A	0m
21:11	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661307 5888370	20°	5m
21:15	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661219 5888377	N/A	0m

Table 9. "Survey #9 – Cottonwood Range Road (centre) – 04/10/2015"

Time	Common Name	Specific Name	Abb.	Type	Location (GDA94 UTM)	Bearing	Distance
21:27	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 660760 5888455	N/A	0m
21:29	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 660746 5888395	210°	15m
21:31	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 660721 5888422	225°	15m
21:35	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 660685 5888607	N/A	0m
21:39	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 660703 5888630	175°	20m
22:11	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 660508 5887911	330°	5m
22:14	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 660466 5887895	160°	5m

Table 10. "Survey #10 – Cottonwood Range Road (south) – 04/10/2015"

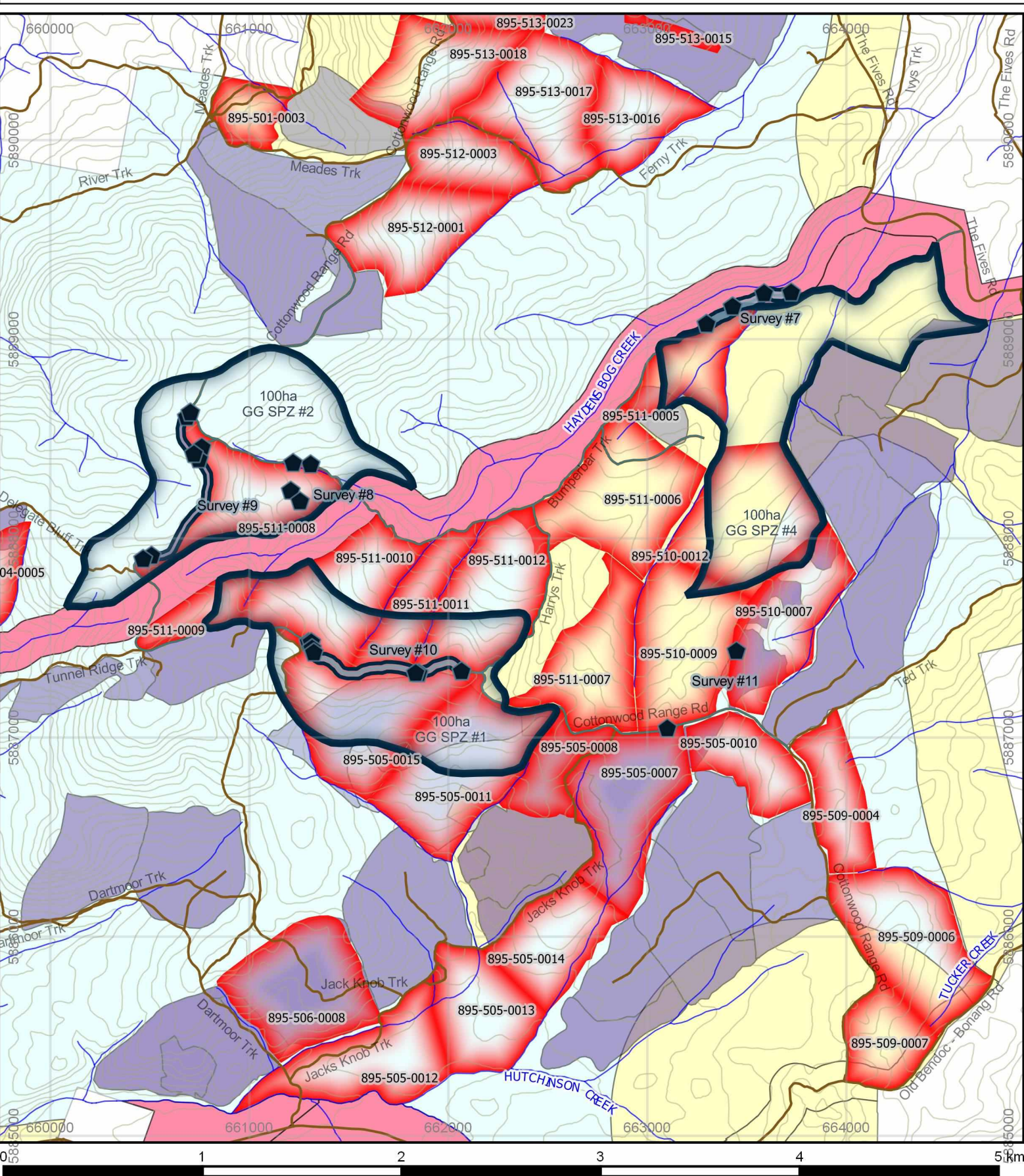
Time	Common Name	Specific Name	Abb.	Type	Location (GDA94 UTM)	Bearing	Distance
22:25	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661297 5887476	225°	10m
22:27	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661311 5887477	55°	30m
22:30	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661315 5887446	60°	20m
22:34	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661323 5887425	260°	5m
22:42	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661850 5887321	N/A	0m
22:42	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661850 5887321	N/A	0m
22:44	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 661835 5887322	5°	20m
22:57	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 662066 5887331	170°	40m
22:57	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 662066 5887331	170°	40m

Table 11. "Survey #11 – Cottonwood Range Road (south)/Ted's Track – 04/10/2015"

Time	Common Name	Specific Name	Abb.	Type	Location (GDA94 UTM)	Bearing	Distance
23:26	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 663100 5887044	350°	40m
23:35	Greater Glider	<i>Petauroides volans</i>	GG	Visual	55 H 663447 5887433	280°	20m



Figure 5. Cottonwood Range Road; Nocturnal Fauna Spotlighting Detection records; High Density Greater Glider Areas and Protection Zones; Forest Management Zoning [DEPI, June, 2014]; Logging History [LASTLOG25]; Scheduled Logging [TRP]



**Legend**

- Greater Glider Record
- High Density Greater Glider Area
- 100ha Special Protection Zone for High Density Greater Glider Area
- Scheduled logging Coupes
- Timber Release plan (TRP) [VicForests: August 2015]

**Forest Management Zones [Selected from FMZ100 DEPI; June 2014]**

- Special Protection Zone
- Special Management Zone
- General Management Zone

- Roads
- Watercourses
- Contours

**Prior Logging History [2014: LASTLOG25]**

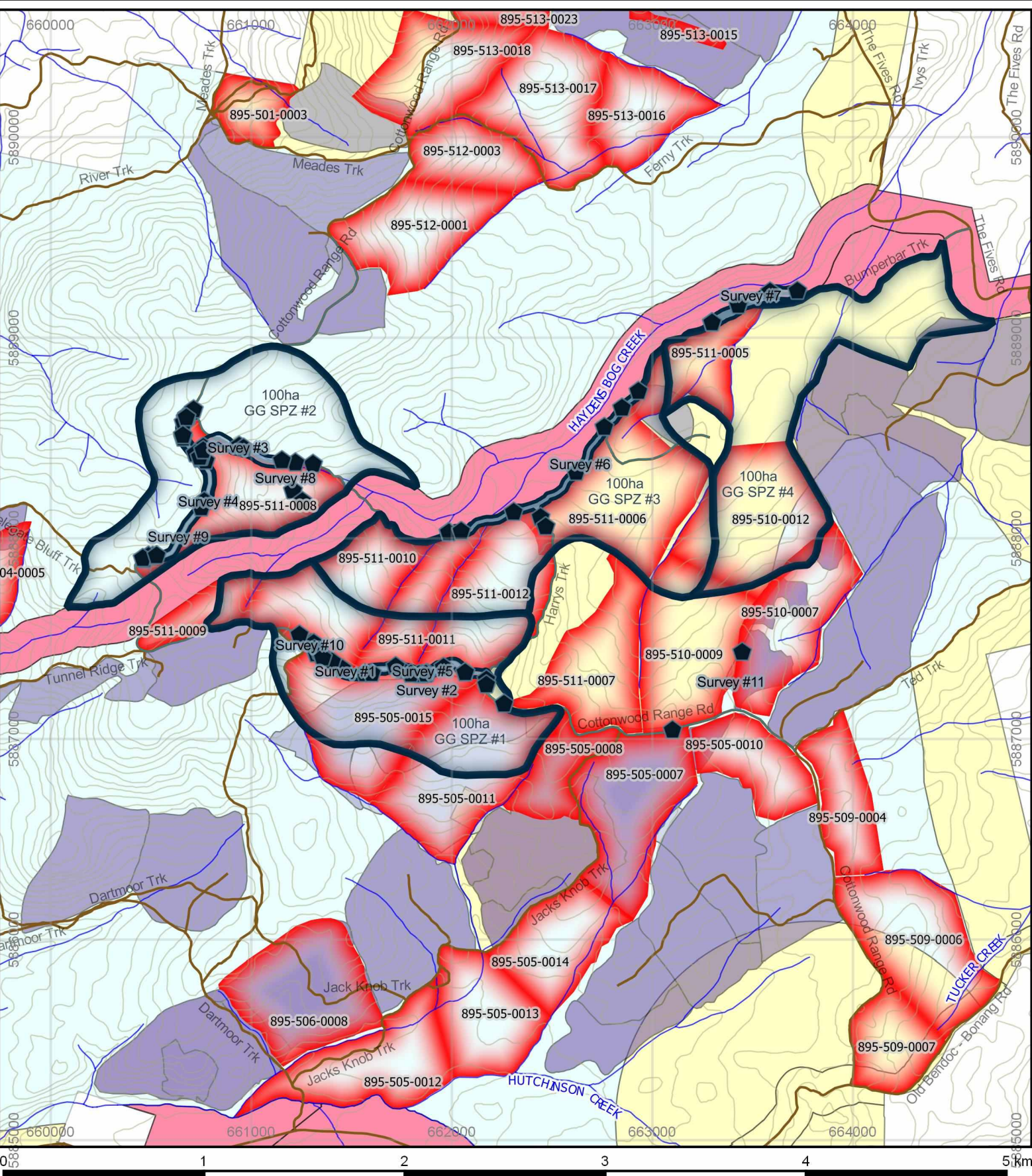
- 195960
- 196970
- 197980
- 198990
- 199900
- 200910
- 201314

**Projection: EPSG: 28355 GDA94/MGA Zone 55**

**Map Scale: 1:25,000**



Figure 6. Cottonwood Range Road; Nocturnal Fauna Spotlighting Detection records; High Density Greater Glider Areas and Protection Zones; Forest Management Zoning [DEPI, June, 2014]; Logging History [LASTLOG25]; Scheduled Logging [TRP]



**Legend**

- Greater Glider Record
- High Density Greater Glider Area
- 100ha Special Protection Zone for High Density Greater Glider Area
- Scheduled logging Coupes Timber Release plan (TRP) [VicForests: August 2015]

**Forest Management Zones**  
[Selected from FMZ100 DEPI; June 2014]

- Special Protection Zone
- Special Management Zone
- General Management Zone

- Roads
- Watercourses
- Contours

**Prior Logging History [2014: LASTLOG25]**

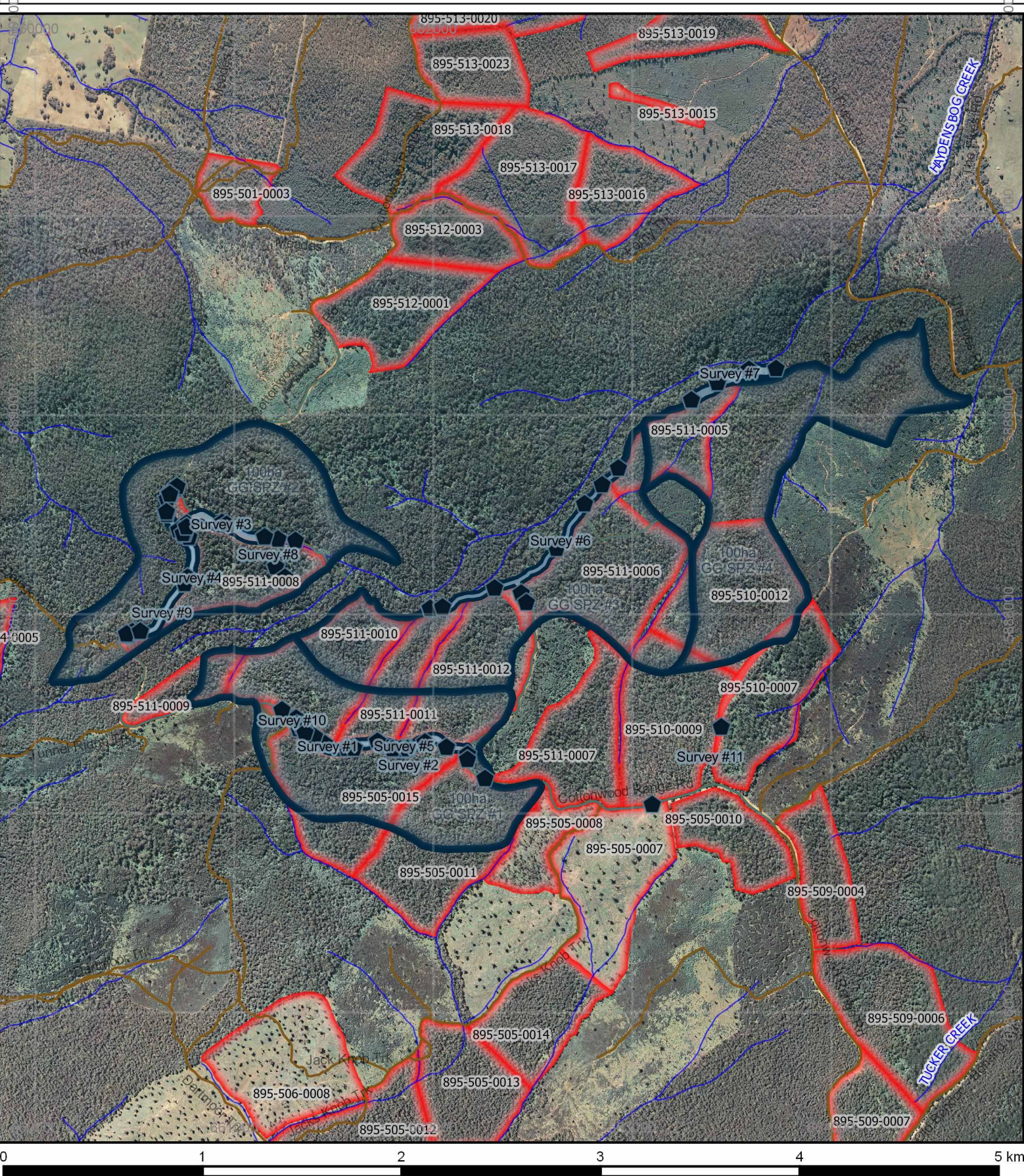
- 195960
- 196970
- 197980
- 198990
- 199900
- 200910
- 201314

**Projection: EPSG: 28355 GDA94/MGA Zone 55**

**Map Scale: 1:25,000**



Figure 7. Cottonwood Range Road; Nocturnal Fauna Spotlighting Detection records; High Density Greater Glider Areas and Protection Zones; Forest Management Zoning [DEPI, June, 2014]; Logging History [LASTLOG25]; Scheduled Logging [TRP]; Aerial Imagery



**Legend**

- Greater Glider Record
- High Density Greater Glider Area
- 100ha Special Protection Zone for High Density Greater Glider Area
- Scheduled logging Coupes Timber Release plan (TRP) [VicForests: August 2015]

Forest Management Zones [Selected from FMZ100 DEPI; June 2014]

- Special Protection Zone
- Special Management Zone
- General Management Zone

Roads

Watercourses

Contours

Projection: EPSG: 28355  
GDA94/MGA Zone 55

Map Scale:  
1:25,000

N



## Results 2 – Photos: Greater Glider (*Petauroides volans*); Figures 2(a-b).

Figure 2(a). Greater Glider (*Petauroides volans*) [Greater Glider photograph taken within investigation location]



Figure 1(b). Greater Glider (*Petauroides volans*) [Greater Glider photograph taken within investigation location]





## Results 2 – Photos: Greater Glider (*Petauroides volans*); Figures 2(c-d).

Figure 2(c). Greater Glider (*Petauroides volans*) [Greater Glider photograph taken within investigation location]



Figure 1(d). Greater Glider (*Petauroides volans*) [Greater Glider photograph taken within investigation location]





## Summary/Conclusions/Discussion

### High-density of Greater Gliders (*Petauroides volans*)

1. Within and adjacent to VicForests scheduled logging coupes 895-505-0008, 895-505-0011, 895-505-0015, 895-510-0009, 895-510-0012, 895-511-0005, 895-511-0006, 895-511-0008, 895-511-0009, 895-511-0010, 895-511-0011, and 895-511-0012 large numbers of Greater Gliders (*Petauroides volans*) were observed and recorded within multiple nocturnal fauna spotlighting survey transects on the evenings of 27/09/2015, 30/09/2015, 01/10/2015, 03/10/2015 and 04/10/2015. These record locations are displayed in the Tables and Maps of Results 1. as the “dark blue pentagon” points.
2. Both the “*Management Standards and Procedures for timber harvesting operations in Victoria’s State forests 2014*” (Department of Environment and Primary Industries, The State of Victoria, 2014) through its “*Planning Standards for timber harvesting operations in Victoria’s State forests 2014, Appendix 5 to the Management Standards and Procedures for timber harvesting operations in Victoria’s State forests 2014*” and the Forest Management Plan For The East Gippsland Forest Management Area (Victorian Department of Conservation and Natural Resources, East Melbourne, December 1995) require that an SPZ (Special Protection Zone) of approximately 100ha of suitable habitat be established for records of > 2 individual Greater Gliders per hectare of spotlighting.
3. 8 of the 11 spotlighting survey transects shown in Results 1., shown in each of the corresponding maps as the “dark blue solid outlined” polygons, recorded Greater Glider individuals at densities > 2.01 Greater Gliders per hectare.
4. Each of the maps presented within Results 1. shows a recommended Special Protection Zone (SPZ) of approximately 100ha of suitable habitat that can be transferred into SPZ in closest proximity to the high density of Greater Glider areas identified within this report (the “dark blue dashed outlined” polygons). These SPZ designs take into account the closest and most suitable forest types required for the species habitat requirements, the distribution of prior logging operations in the nearby area and the investigation locations topographic configurations and infrastructural features.
5. In order to meet the requirements of the High Density of Greater Glider prescriptions contained within the regulatory framework governing logging operations in Victoria's State Forests these Special Protection Zones must be fully implemented prior to any further logging planning or operations within this area.
6. **VicForests must refrain from and The Department of Environment, Land, Water and Planning must restrain VicForests from logging within any of the 100ha SPZ's displayed in the maps of Results 1. and ensure that these areas are protected from the effects of logging including “regeneration” burns.**