

## INVESTIGATION REPORT

# DETECTION OF UNDESCRIBED EAST GIPPSLAND SPINY CRAYFISH (*Euastacus sp.*)

## ARTE RIVER – PUGGAREE ROAD

VicForests' Logging Coupes:  
833-512-0019, 833-512-0024 and 833-512-0025

### Abstract

This investigation report details the detection of a significant Spiny Crayfish (*Euastacus sp.*) from the “East Gippsland Spiny Crayfish Group” encountered in an investigation of threatened species values within VicForests scheduled logging coupes 833-512-0019, 833-512-0024 and 833-512-0025.

Recommendations are made to the Department of Environment, Land, Water and Planning (DELWP) to pursue the requirements of the precautionary principle and the need to apply appropriate management zones within the study location and ensure that rare, threatened and as yet undescribed species throughout State Forest areas are not affected by the impact of VicForests logging operations.

### 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

### Relevant Organisations

- VicForests
- Logging contractors operating in coupes 833-512-0019, 833-512-0024 and 833-512-0025.

### Status of Site

Coupe 833-512-0024 is currently active and coupes 833-512-0019 and 833-512-0025 are scheduled for logging.

### Date of Investigation

20/04/2017

### Surveyors

Andrew Lincoln  
Jake Mckenzie

### Authors

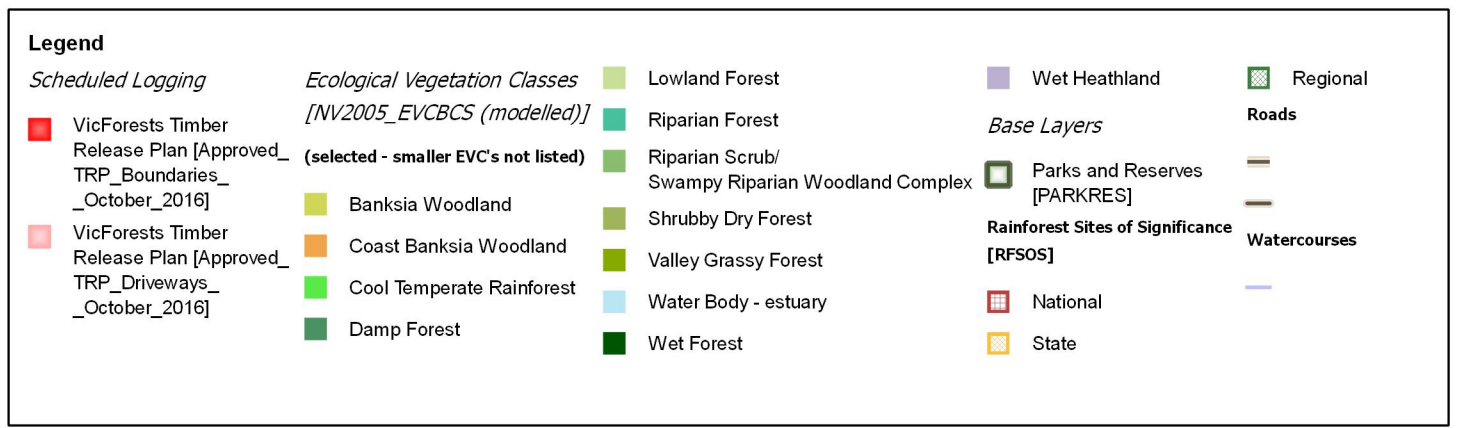
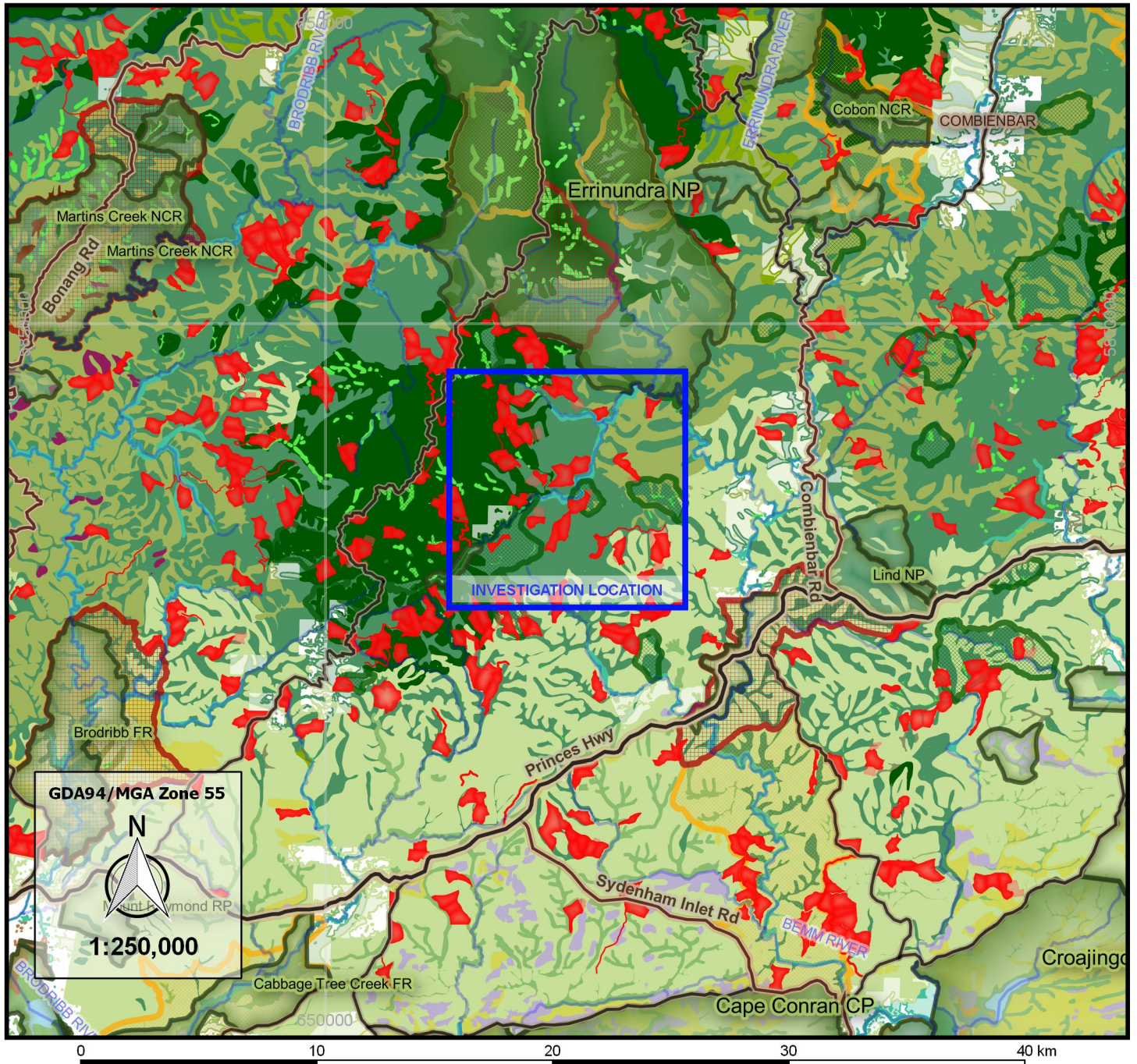
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### Date of report

26/04/2017

## Study Location Overview

Figure A. VicForests scheduled logging coupes 833-512-0019, 833-512-0024 and 833-512-0025 off Puggaree Road in the “Purgagoolah Forest Block” of East Gippsland.





## Method Used and Results Summary

### Equipment Used

- Digital Camera
- Head Torch
- Global Positioning System (GPS)  
[Garmin GPSMAP 62s]

### Method used/Results Summary – Walking search/inspection of creeks for *Euastacus* sp.

1. On 20 April 2017 surveyors conducted a nocturnal active riparian search covering a section of the watercourses within and adjacent to VicForests active and scheduled logging coupes 833-512-0019, 833-512-0024 and 833-512-0025.
2. At approximately 55 H 660308 5842161 (PU102GSPV) an *Euastacus* sp. individual was observed moving through a small pool in a tributary of the Arte River system.
3. Photographs were taken of this *Euastacus* sp. individual at the location described above with the process of identifying this species commencing on site as per the Victorian Government Department of Environment, Land, Water and Planning's "survey standard" "10-Spiny-Cray-Euastacus-spp-Survey-Standards-FINALv1.0\_2MAY11" as published on their website.<sup>1</sup>
4. In field species identification found that the *Euastacus* sp. individual was from within the "East Gippsland Spiny Cray Group (EGSCGroup)".
5. The *Euastacus* sp. of the "East Gippsland Spiny Cray Group (EGSCGroup)" at this location are an as yet undescribed species of Spiny Crayfish.
6. Photographs of the undescribed species of East Gippsland Spiny Crayfish encountered are provided in the Results 1. section as Figure 1. and further location details are provided in the maps of Results 2. below.



<sup>1</sup> "Survey Standard: Spiny Crayfish, *Euastacus* spp. (including the Orbost Spiny Crayfish)" The Department of Sustainability and Environment Approved Survey Standards: Spiny Crayfish *Euastacus* spp., v.1.0, 2 May 2011

## Method 2 (analysis/recommendations)

Excerpts from: “Code of Practice for Timber Production 2014, Department of Environment and Primary Industries, The State of Victoria, 2014”<sup>2</sup>

### 1 General

#### 1.2 The Code of Practice for Timber Production

##### 1.2.6 Compliance on State forest

Under the *Sustainable Forests (Timber) Act 2004*, compliance with this Code is mandatory for any person planning for or conducting a timber harvesting operation on **State forest**. Penalties for noncompliance may apply if timber harvesting operations on State forest are not in accordance with the Code.

Timber harvesting operations on public land other than State forest are governed by lease and licence conditions which may specify a requirement to comply with this Code.

The Code is a prescribed legislative instrument made and enforced under relevant law listed in the *Conservation, Forests and Lands Act 1987*. For the purposes of each relevant law the **Secretary** is an **authorised officer** and is therefore responsible for ensuring compliance with the Code on State forest. Compliance is also monitored by other authorised officers appointed by the Secretary pursuant to the *Conservation, Forests and Lands Act 1987*.

### 2 Code Application – State Forests

This Chapter applies to the planning, harvesting, roading, **tending** and **regeneration** of **State forests** where **timber harvesting operations** are conducted, including both **native forests** and **plantation forests** that are owned and managed by the State.

#### 2.2 Environmental Values in State forests

Timber harvesting operations in native forests may have local impacts on environmental values such as water quality and **biodiversity**. Appropriate planning and management through the lifecycle of the timber harvesting operation can minimise these impacts. This section includes requirements that must be observed during planning, roading, harvesting, tending and regeneration of native forests.

##### 2.2.2 Conservation of Biodiversity

###### Operational Goal

**Timber harvesting operations** in **State forests** specifically address **biodiversity** conservation risks and consider relevant scientific knowledge at all stages of planning and management.

Harvested State forest is managed to ensure that the **forest** is regenerated and the biodiversity of the **native forest** is perpetuated.

The natural floristic composition and representative gene **pools** are maintained when regenerating native forests by protecting long-lived **understorey** species and using appropriate seed sources and mixes of dominant species.

Forest health is monitored and maintained by employing appropriate preventative, protective and remedial measures.

Chemicals are only used where appropriate to the site conditions and are conducted with due care for the maintenance of forest health, water quality, biodiversity and soil values.

###### Mandatory Actions

###### Addressing biodiversity conservation risks considering scientific knowledge

2.2.2.1 Planning and management of timber harvesting operations must comply with relevant biodiversity conservation measures specified within the **Management Standards and Procedures**.

2.2.2.2 The **precautionary principle** must be applied to the conservation of biodiversity values. The application of the precautionary principle will be consistent with relevant monitoring and research that has improved the understanding of the effects of forest management on forest ecology and conservation values.

2 Code of Practice for Timber Production 2014, pp. 11, 21, 23, 31-32, 34-35

- 2.2.2.3 The advice of relevant experts and relevant research in conservation biology and flora and fauna management must be considered when planning and conducting timber harvesting operations.
- 2.2.2.4 During planning identify biodiversity values listed in the Management Standards and Procedures prior to roading, harvesting, **tending** and **regeneration**. Address risks to these values through management actions consistent with the Management Standards and Procedures such as appropriate location of **coupe infrastructure, buffers, exclusion areas**, modified harvest timing, modified silvicultural techniques or retention of specific structural attributes.
- 2.2.2.5 Protect areas excluded from harvesting from the impacts of timber harvesting operations.
- 2.2.2.6 Ensure chemical use is appropriate to the circumstances and provides for the maintenance of biodiversity.
- 2.2.2.7 **Rainforest** communities must not be harvested.

**Perpetuating the biodiversity of harvested native forests**

- 2.2.2.8 Long-term (strategic) **forest** management planning must incorporate **wildlife corridors**, comprising appropriate widths of retained forest, to facilitate animal movement between patches of forest of varying ages and stages of development, and contribute to a linked system of reserves.
- 2.2.2.9 Modify **coupe** size and **rotation** periods to maintain a diversity of forest structures throughout the landscape.
- 2.2.2.10 Retain and protect **habitat trees** or habitat patches and long-lived **understorey** species to provide for the continuity and replacement of old hollow-bearing trees and existing vegetation types within each coupe.
- 2.2.2.11 Use silvicultural systems that suit the ecological requirements of the **forest type**.
- 2.2.2.12 Regenerate harvested areas using seed from **overstorey** species with **provenances** native to the area.

**Glossary**

‘**precautionary principle**’ means when contemplating decisions that will affect the environment, careful evaluation of management options be undertaken to wherever practical avoid serious or irreversible damage to the environment; and to properly assess the risk-weighted consequences of various options. When dealing with threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

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>3</sup>

**“4. Biodiversity**

**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 5 Detection based FMZ rules for fauna.**<sup>4</sup>

FMA	Common name	Scientific name	Zoning management actions	Management actions	Review
East Gippsland	Orbost Spiny Crayfish	Euastacu diversus	<b>Establish a SPZ extending 100 m from each bank for 1 km upstream and 1 km downstream of verified detection sites.</b>	<b>Avoid constructing new roads and stream crossings within the SPZ. Manage nearby regeneration burns to ensure the SPZ is not burnt.</b>	Review this strategy when 20 sites are established.

<sup>3</sup> *Planning Standards*, p. 36

<sup>4</sup> *Planning Standards*, “Table 4 Detection based FMZ rules for fauna”, p. 45



## Results 1 (Photos and location details)

Figure 1(a). Undescribed *Euastacus* sp.  
at 55 H 660308 5842161 (GDA94 UTM)



Figure 1(b). Undescribed *Euastacus* sp.  
at 55 H 660308 5842161 (GDA94 UTM)



Figure 1(c). Undescribed *Euastacus* sp.  
at 55 H 660308 5842161 (GDA94 UTM)

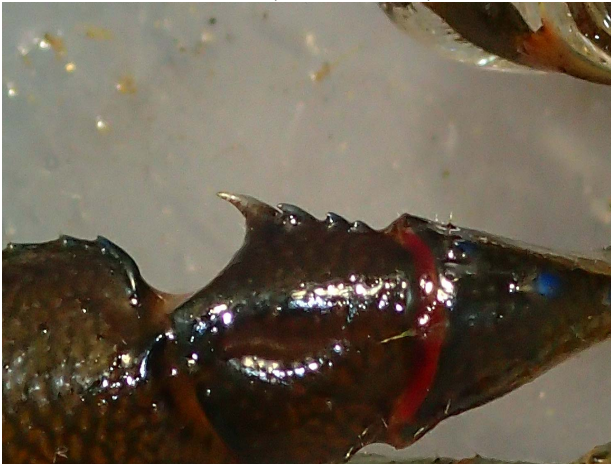


Figure 1(d). Undescribed *Euastacus* sp.  
at 55 H 660308 5842161 (GDA94 UTM)



Figure 1(e). Undescribed *Euastacus* sp.  
at 55 H 660308 5842161 (GDA94 UTM)



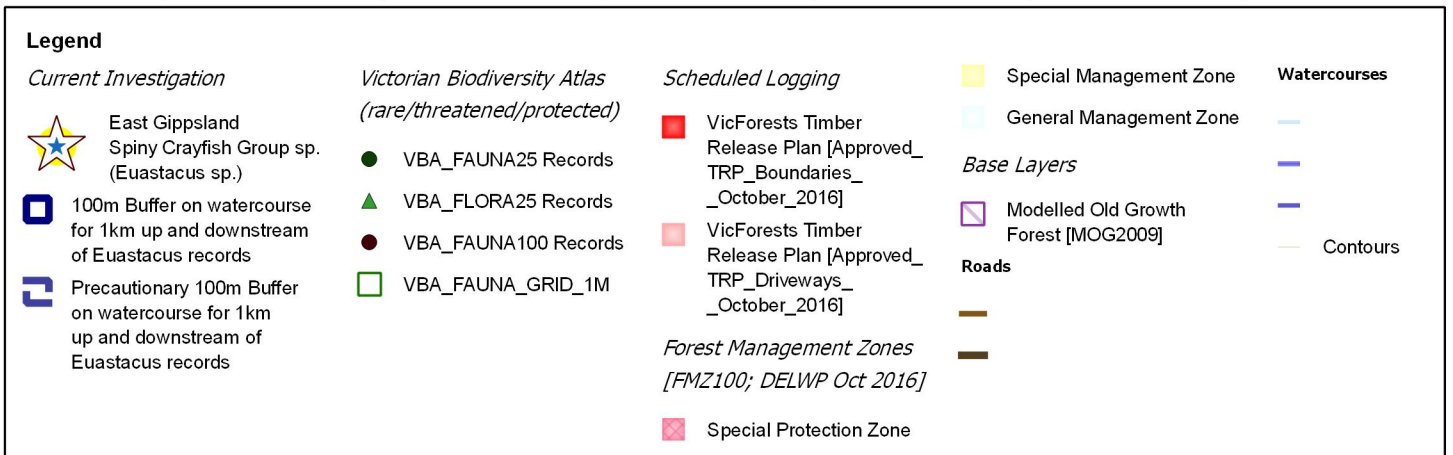
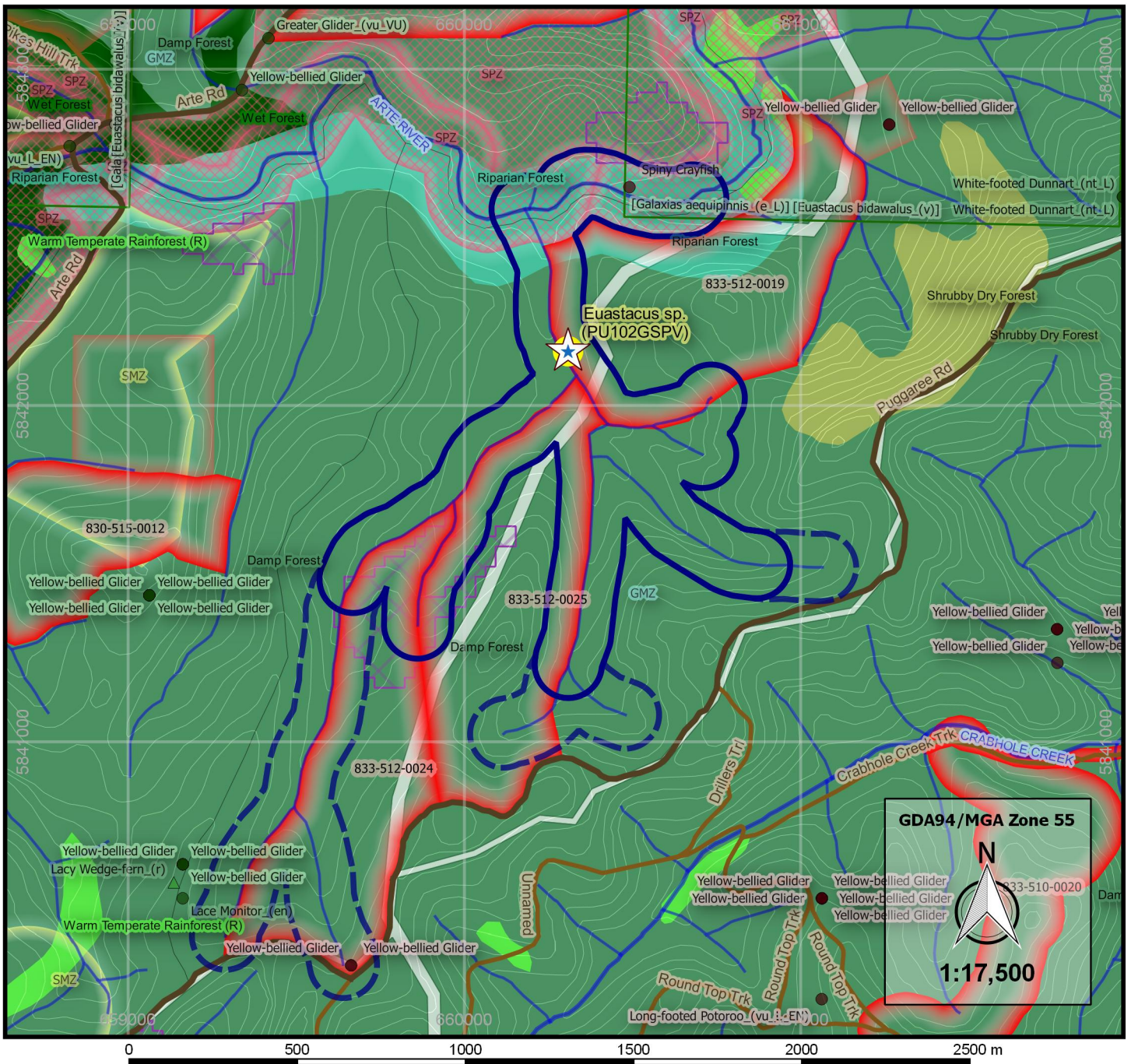
Figure 1(f). Undescribed *Euastacus* sp.  
at 55 H 660308 5842161 (GDA94 UTM)





## Results 2 (Maps)

Figure 2. Arte River – Puggaree Road\_ Undescribed *Euastacus* sp. Records



## Discussion/Conclusions/Recommendations

### *Euastacus sp.* (Undescribed Spiny Crayfish Species)

1. A *Euastacus sp.* (Undescribed Spiny Crayfish Species) from within the “East Gippsland Spiny Cray Group (EGSCGroup)” was identified and recorded from within or downstream from VicForests scheduled logging coupes 833-512-0019, 833-512-0024 and 833-512-0025 at the location displayed as the “white and blue and yellow outlined star” symbol in Figure 2. of Results 2 above.
2. The closely related Orbost Spiny Crayfish, also from the same “East Gippsland Spiny Cray Group (EGSCGroup)” as the Undescribed Spiny Crayfish Species, is considered “endangered” in Victoria according to the Department of Environment, Land, Water and Planning “Advisory list of rare or threatened invertebrate fauna in Victoria – 2009”.<sup>5</sup>
3. The existence of this *Euastacus sp.* (Undescribed Spiny Crayfish Species) at this location is not apparently known to either VicForests or DELWP. This implication is inferred through considering the absence of any records of this species on the VBA and the lack of any responsive management zoning present on the Forest Management Zone Scheme (FMZ\_100, DEPI, October 2016) or via <http://nremap-sc.nre.vic.gov.au/MapShare.v2/imf.jsp?site=forestexplorer> (25 April 2017).
4. Currently this species is being managed as per the management prescriptions relevant to the Orbost Spiny Crayfish in the “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”. Section 4.3.1.1-2 of the Planning Standards requires that for all verified records of *Euastacus diversus* (Orbost Spiny Crayfish) the “FMZ amendments and reviews in accordance with Table 4” must be applied. Table 4. requires that for records of *Euastacus diversus* (Orbost Spiny Crayfish), a SPZ extending 100 m from each bank for 1 km upstream and 1 km downstream" must be established.
5. **As a regulator of operations within Victoria's State Forests DELWP must ensure VicForests abides by these prescriptions including by applying the minimum 100m Special Protection Zone indicatively displayed in Results 2. Figure 2. for the *Euastacus sp.* (Undescribed Spiny Crayfish Species) locations displayed and any others found within 1000m of VicForests' scheduled logging coupes.**
6. **DELWP must restrain VicForests from logging in the area of these *Euastacus sp.* (Undescribed Spiny Crayfish Species) records including within coupes 833-512-0019, 833-512-0024 and 833-512-0025 as well as any additional surrounding areas where the species is present.**
7. **A thorough search for the presence of and evaluation of the extent and population health of *Euastacus sp.* (Undescribed Spiny Crayfish Species) must be undertaken within any further areas where VicForests intends to log and the species presence is possible and specifically within the currently active coupe 833-512-0024 before any further logging takes place.**

5 Department of Sustainability and Environment, “Advisory list of rare or threatened invertebrate fauna in Victoria – 2009”, Department of Sustainability and Environment, East Melbourne, 2009, p. 9