INVESTIGATION REPORT

DETECTION OF
ORBOST SPINY CRAYFISH
(Euastacus diversus)
Murrungowar Rd – Rocky River Catchment

VicForests Logging Coupe:
829-517-0002

Abstract
This investigation report details the detection of the endangered Orbost Spiny Crayfish (Euastacus diversus) encountered within an investigation of threatened species values within VicForests scheduled logging coupe 829-517-0002.

The regulatory framework governing logging operations in Victoria, through the ‘Code of Practice for Timber Production 2014’ and its incorporated documents require that for records of Euastacus diversus (Orbost Spiny Crayfish), an “SPZ extending 100m from each bank for 1 km upstream and 1 km downstream” must be established within which all logging must be excluded.

Relevant Legislation
  Incorporated documents:

Status of Site: Logging
VicForests clear-fell logging coupe 829-517-0002 is currently Approved on VicForests Timber Release Plans, logging operations may soon be active. VicForests logging coupe covers an area of approximately 43 hectares, and is situated in Murrungowar state forest, in the Orbost district.

<table>
<thead>
<tr>
<th>Listed Values</th>
<th>Within Close Proximity To Coupe</th>
<th>Within Catchment</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Euastacus diversus) Records (VBA25)</td>
<td>Euastacus diversus within coupe</td>
<td>Euastacus diversus</td>
</tr>
<tr>
<td>(Euastacus diversus) Records (VBA100)</td>
<td>Null</td>
<td>Null</td>
</tr>
<tr>
<td>Modelled Old Growth Forest (MOG2003, MOG2009)</td>
<td>~7.8ha (MOG2009)</td>
<td>~26ha (MOG2003)</td>
</tr>
<tr>
<td>Management Zones: GMZ, SMZ, SPZ</td>
<td>Special Management Zone (coupe within)</td>
<td>Special Protection Zone Linear Reserve Rainforest Site Of Significant</td>
</tr>
<tr>
<td>Ecological Vegetation Class modelling: Damp Forest (EVC29), Wet Forest (EVC30)</td>
<td>Damp Forest (EVC29), Wet Forest (EVC30), Warm Temperate Rainforest (EVC32)</td>
<td></td>
</tr>
<tr>
<td>On Site Assessment / Observations</td>
<td>Crayfish habitat, Hollow-bearing trees, Old growth value, Damp Forest, Warm Temperate Rainforest, Yellow-bellied Glider, Common Brush-tail Possum, VROT-Flora spp. Deparia petersoni ssp. congrua</td>
<td>Crayfish habitat, Hollow bearing trees, Old growth value, Damp Forest, Wet Forest, Warm Temperate Rainforest</td>
</tr>
<tr>
<td>State Forest, Parks, Reserves &amp; Zoning</td>
<td>Murrungowar State Forest</td>
<td>Murrungowar State Forest</td>
</tr>
</tbody>
</table>

Date of Investigation: 30/01/2017 - 02/10/2017
Date of report: 28/10/2017
Surveyors: Owen Hanson, Andrew Lincoln
Contributing Organisations: Goongerah Environment Centre Office, geco.media@gmail.com Fauna and Flora Research Collective Inc. asl80@hotmail.com

171028 - Threatened species detection _Euastacus diversus_ Orbost Spiny Crayfish - Rocky River-VF_829-517-0002_GECO 1/11
Method Used and Results Summary

**Equipment Used**
- Digital Camera
- Head torch
- Global Positioning System (GPS) [Garmin GPSMAP 62s]

**Method used/Results Summary:** 30/01/2017

Riparian Search, walking night spotlight search/inspection of creeks for Aquatic fauna

1. On the night of the 29th & morning of the 30th of January 2017 surveyors conducted a nocturnal active riparian search covering sections of the watercourses on the northern and southern boundaries within and adjacent to VicForests scheduled logging coupe 829-517-0002. Suitable habitat was found in the tributaries that were explored during surveys. This consisted of disconnected clear rocky pools along the length of each tributary.

2. At ~3:30am on the 30th at approximately 55 H 650530 5837210 (location 01), crayfish young individuals were observed within a small pool in the tributary on the northern side of coupe 829-517-0002. As the pool was watched and scanned with torchlight at ~3:40am a mature *Euastacus diversus* emerged from rocks within the pool.

3. Photographs were taken of the mature *Euastacus diversus* individual at location 01 which was identified to the “East Gippsland Spiny Cray Group (EGSCGroup)” as per the Victorian Government Department of Environment, Land, Water and Planning’s “survey standards” “10-Spiny-Cray-Euastacus-spp-Survey-Standards-FINALv1.0_2MAY11” as published on their website. Identification to species is derived from Euastacus spp. distributions spatially delineated within the “Victorian Biodiversity Atlas” spatial dataset (VBA-25) records within catchment, and with reference to “A Guide to Australia’s Spiny Freshwater Crayfish” (McCormack, R. B., 2012).

4. Photographs of Orbost Spiny Crayfish (*Euastacus diversus*) encountered are provided in the Results 1. section as Figure 1. and further location details are provided in the maps of Results 2. below.

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

Method Used and Results Summary

Incidental, walking night spotlight inspection of creeks for Aquatic fauna habitat

1. On the morning of the 12 May 2017 within coupe 892-517-0002, during a nocturnal fauna survey that recorded the presence of Yellow-bellied Gliders, sections of a tributary within and adjacent to the coupe was briefly inspected for aquatic fauna habitat. Suitable habitat was found in the tributary that was explored. This suitable habitat consisted of disconnected rocky pools at the upper part of the tributary.

2. At ~5:45am on the 12th at approximately 55 H 650585 5836674 (location 02), a crayfish individual was sighted within a small pool in the tributary on the southern side of coupe 829-517-0002 but The individual sighted disappeared in to the rocks and leaf litter before identification to species could be confirmed. The pool was scanned with torchlight and watched but no Euastacus diversus, or other crayfish species emerged from rocks within the pool. The crayfish was believed to be a Euastacus sp.

3. No photographs were taken of the individual at locations 02.

Riparian Search, walking night spotlight inspection of creeks for aquatic fauna

1. On the night of the 29th of September 2017 surveyors conducted a nocturnal active riparian search covering sections of a watercourse within VicForests scheduled logging coupe 829-517-0002. Suitable habitat was found in the tributary that was explored during surveys, this consisted of small stream flows and disconnected clear and dirty rocky pools along the length of the tributary.

2. At ~8:13pm on the 29th at approximately 55 H 650227 5837210 (location 03), a crayfish individual was observed within a small part of the stream in the tributary within coupe 829-517-0002. The individual was assessed to be a mature Euastacus diversus.

3. Photographs were taken of the mature Euastacus diversus individual at location 03 and was identified to the “East Gippsland Spiny Cray Group (EGSCGroup)” as per the Victorian Government Department of Environment, Land, Water and Planning’s “survey standards”’10-Spiny-Cray-Euastacus-spp-Survey-Standards-FINALv1.0 _2MAY11’ as published on their website. Identification to species is derived from Euastacus spp. distributions spatially delineated within the “Victorian Biodiversity Atlas” spatial dataset (VBA-25) records within catchment, and with reference to “A Guide to Australia’s Spiny Freshwater Crayfish” (McCormack, R. B., 2012).4

4. Photographs of Orbost Spiny Crayfish (Euastacus diversus) encountered are provided in the Results 1. section as Figure 1. and further location details are provided in the maps of Results 2. below.

Riparian Search, walking night spotlight inspection of creeks for Aquatic fauna

1. On the night of the 1st & the morning of the 2nd of October 2017 surveyors conducted a nocturnal active riparian search covering sections of the watercourses on the southern boundaries within and adjacent to VicForests scheduled logging coupe 829-517-0002. Suitable habitat was found in the tributaries that were explored which consisted of disconnected clear and dirty rocky pools along the length of both tributaries.

2. At ~11:42pm on the 1st of October approximately 55 H 650063 5836772 (location 04), a crayfish individual was observed within a small pool in the tributary on the southern side of coupe 829-517-0002. The individual was assessed to be a mature Euastacus diversus.

3. At ~12:24am on the 2nd at approximately 55 H 650159 5836649 (location 05), a crayfish individual was found under a rock within a small pool in the tributary on the southern side of coupe 829-517-0002. The individual was assessed to be mature Euastacus diversus.

4. At ~1:10am on the 2nd at approximately 55 H 650227 5836612 (location 06), a crayfish individual (thought to be Euastacus sp.) was sighted before disappearing under a large rock within a pool of the tributary. As the pool was watched and scanned with torchlight a mature second crayfish was observed under a rock within a pool of the tributary on the southern side of coupe 829-517-0002. The second individual was assessed to be a mature Euastacus diversus.

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3 "Survey Standard: Spiny Crayfish, Euastacus spp. (including the Orbost Spiny Crayfish)” The Department of Sustainability and Environment Approved Survey Standards: Spiny Crayfish Euastacus diversus, v.1.0, 2 May 2011
Method Used and Results Summary- (Continued)

5. Photographs were taken of the *Euastacus diversus* of the mature individuals at locations 04, 05 & 06 and were identified to the “East Gippsland Spiny Cray Fish Group (EGSCGroup)” as per the Victorian Government Department of Environment, Land, Water and Planning's “survey standards” “10-Spiny-Cray-Euastacus-spp-Survey-Standards-FINALv1.0_2MAY11” as published on their website. Identification to species is derived from Euastacus spp. distributions spatially delineated within the "Victorian Biodiversity Atlas" spatial dataset (VBA-25) records within catchment, and with reference to "A Guide to Australia's Spiny Freshwater Crayfish" (McKormack, R. B., 2012).

6. Photographs of Orbost Spiny Crayfish (*Euastacus diversus*) encountered are provided in the Results 1. section as Figure 1. and further location details are provided in the maps of Results 2. below.

Results 1 (Table of Detections)

| Riparian Search, walking night spotlight search/inspection of creeks for Aquatic fauna on the 30/01/2017 | Time/Date: 3:30am-30/01/17 | Location: Loc.1 | Species: Euastacus Sp. | Number of Individual(s): 5 Juveniles | Male: Unknown, Female: Unknown | Waterway Class/Pool: 1st order/Pool | Photograph Taken: N | Identifying Features: Null | Distinguishing Features: Null | Identification Confirmed: Y/N |  
| | | UTM/UPS: 55 H 650530 5837210 | | | | | | | | | |

| | Time/Date: 3:40am-30/01/17 | Location: Loc.1 | Species: Euastacus diversus | Number of Individual(s): 1 Mature | Male: Male | Waterway Class/Pool: 1st order/Pool | Photograph Taken: Y | Identifying Features: 5/6 | Distinguishing Features: Y | Identification Confirmed: Y/N |  
| | | UTM/UPS: 55 H 650530 5837210 | | | | | | | | | |

| Incidental, walking night spotlight inspection of creeks for Aquatic habitat on the 12/05/2017 | Time/Date: 5:45am-12/05/17 | Location: Loc.2 | Species: Euastacus Sp. ? | Number of Individual(s): Unknown | Male: Unknown, Female: Unknown | Waterway Class/Pool: 1st order/Pool | Photograph Taken: N | Identifying Features: Null | Distinguishing Features: Null | Identification Confirmed: Y/N |  
| | | UTM/UPS: 55 H 650585 5836674 | | | | | | | | | |

| | Time/Date: 8:13pm-30/09/17 | Location: Loc.3 | Species: Euastacus diversus | Number of Individual(s): 1 Mature | Male: Male | Waterway Class/Pool: 1st order/Stream Small | Photograph Taken: Y | Identifying Features: 6/6 | Distinguishing Features: Y | Identification Confirmed: Y/N |  
| | | UTM/UPS: 55 H 650227 5837210 | | | | | | | | | |

| Riparian Search, walking night spotlight search/inspection of creeks for Aquatic fauna on the 29/09/2017 | Time/Date: 11:43pm-01/10/17 | Location: Loc.4 | Species: Euastacus diversus | Number of Individual(s): 1 Mature | Male: Male | Waterway Class/Pool: 2nd order/Pool | Photograph Taken: Y | Identifying Features: 5/6 | Distinguishing Features: Y | Identification Confirmed: Y/N |  
| | | UTM/UPS: 55 H 650063 5836772 | | | | | | | | | |

| | Time/Date: 12:24am-02/10/17 | Location: Loc.5 | Species: Euastacus diversus | Number of Individual(s): 1 Mature | Male: Male | Waterway Class/Pool: 2nd order/Pool | Photograph Taken: Y | Identifying Features: 6/6 | Distinguishing Features: Y | Identification Confirmed: Y/N |  
| | | UTM/UPS: 55 H 650159 5836649 | | | | | | | | | |

| | Time/Date: 1:10am-02/10/17 | Location: Loc.6 | Species: Euastacus diversus | Number of Individual(s): 1 Mature | Male: Hermaphrodite | Waterway Class/Pool: 2nd order/Pool | Photograph Taken: Y | Identifying Features: 6/6 | Distinguishing Features: Y | Identification Confirmed: Y/N |  
| | | UTM/UPS: 55 H 650227 5836612 | | | | | | | | | |

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5 “Survey Standard: Spiny Crayfish, Euastacus spp. (including the Orbost Spiny Crayfish)” The Department of Sustainability and Environment Approved Survey Standards: Spiny Crayfish Euastacus diversus, v.1.0, 2 May 2011

Results 2 (Photos and location details)

Photos taken of Euastacus diversus during nocturnal active-riparian search on 30/01/17 found at location 01 (55H 650530 5837210 GDA94 UTM) as identified in Figure B. See map below.

Figure 1.1(a). Euastacus diversus (location 01)  
Figure 1.1(b). Mesial Carpal Spines  
Figure 1.1(c). Ventral Spine & Ventromesial Carpal Spines  
Figure 1.1(d). Male Cuticle Partition  
Figure 1.1(e). Dorsal Thoracic Spines  
Figure 1.1(f). Abdominal Spines (Not Formed)

Photos taken of Euastacus diversus during nocturnal active-riparian search on 30/01/17 found at location 03 (55H 650227 5837210 UTM) as identified in Figure B. See map below.

Figure 1.2(a). Euastacus diversus (location 03)  
Figure 1.2(b). Mesial Carpal Spines  
Figure 1.2(c). Ventral Carpal & Ventromesial Carpal Spines  
Figure 1.2(d). Male Cuticle Partition  
Figure 1.2(e). Dorsal Thoracic Spines  
Figure 1.2(f). Abdominal Spines
Results 2 (Photos and location details)

Photos taken of Euastacus diversus during nocturnal active-riparian search on 01/10/17-02/10/17 found at location 04 (55 H 650063 5836772 GDA94 UTM) as identified in Figure B. See map below.

<table>
<thead>
<tr>
<th>Figure 2.1(a). Euastacus diversus (location 04)</th>
<th>Figure 2.1(b). Mesial Carpal Spines</th>
<th>Figure 2.1(c). Ventral Carpal &amp; Ventromesial Carpal Spines</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Figure 2.1(d). Male Cuticle Partition</th>
<th>Figure 2.1(e). Dorsal Thoracic Spines</th>
<th>Figure 2.1(f). Abdominal Spines (Not Formed)</th>
</tr>
</thead>
</table>

Photos taken of Euastacus diversus during nocturnal active-riparian search on 01/10/17-02/10/17 found at location 05 (55 H 650159 5836649 GDA94 UTM) as identified in Figure B. See map below.

<table>
<thead>
<tr>
<th>Figure 2.2(a). Euastacus diversus (location 05)</th>
<th>Figure 2.2(b). Mesial Carpal Spines</th>
<th>Figure 2.2(c). Ventral Carpal &amp; Ventromesial Carpal Spines</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Figure 2.2(d). Male Cuticle Partition</th>
<th>Figure 2.2(e). Dorsal Thoracic Spines</th>
<th>Figure 2.2(f). Abdominal Spines</th>
</tr>
</thead>
</table>
Results 2 (Photos and location details)

Photos taken of Euastacus diversus during nocturnal active-riparian search on 01/10/17-02/10/17 found at location 06 (55 H 650227 5836612 GDA94 UTM) as identified in Figure B. See map below.

| Figure 2.3(a). Euastacus diversus (location 06) | Figure 2.3(b). Mesial Carpal Spines | Figure 2.3(c). Ventral Carpal & Ventromesial Carpal Spines |
| Figure 2.3(d). Male Cuticle Partition | Figure 2.3(e). Dorsal Thoracic Spines | Figure 2.3(f). Abdominal Spines |
| Figure 2.3(g). Hermaphrodite (Male Gonopores & Female Gonopores) |
### Results 2 (Photos and location details)

Photos taken of Euastacus diversus during nocturnal active-riparian search on the 01/10/17-02/10/17

<table>
<thead>
<tr>
<th>Figure 3(a)</th>
<th>Figure 3(b)</th>
<th>Figure 3(c)</th>
<th>Figure 3(d)</th>
<th>Figure 3(e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Euastacus diversus (location 01)</td>
<td>Euastacus diversus (location 03)</td>
<td>Euastacus diversus (location 04)</td>
<td>Euastacus diversus (location 05)</td>
<td>Euastacus diversus (location 06)</td>
</tr>
</tbody>
</table>
Results 2 Figure B. Rocky River - Euastacus diversus records and 100m Buffers

Threatened Species Detection & Protective Buffers - Euastacus diversus (Orbost Spiny Crayfish)
Rocky River - Murrungower State Forest
Vicforest Logging Coupe 829-517-0002

Legend
- New Detection Location (Euastacus diversus)
- Euastacus diversus VBA_FAUNA25 Record
- Crayfish Sighting
- Large Pools
- Watercourses
- Contours
- Roads
- Required Protection Zone
- Modelled Old Growth 2003
- Vicforest Logging History
- Modelled Old Growth 2009
- State Forest

Euastacus diversus Rocky River - VicForest Logging Coupe 829-517-0002, Murrungower State Forest, East Gippsland, Map Created 28/10/2017.
**Results 3 (analysis/recommendations)**


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 non-compliance may apply if timber harvesting operations on State forest are not in accordance with the 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 - 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.

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.

2.2.2.3 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 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.

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”

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.*

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

7 Code of Practice for Timber Production 2014, pp. 11, 21, 23, 31-32, 34-35
8 Planning Standards, p. 36
9 Planning Standards, “Table 4 Detection based FMZ rules for fauna”, p. 45
Discussion/Conclusions/Recommendations

Euastacus diversus (Orbost Spiny Crayfish)

1. Euastacus diversus (Orbost Spiny Crayfish) individuals were recorded and identified from within VicForests scheduled logging coupe 829-517-0002 at the locations displayed as the “yellow stars” symbols, for Euastacus crayfish recorded but not identified to species their locations are displayed as Yellow circle, in Figure A and B. of Results 2 above.

2. 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, requires that for all verified records of Euastacus diversus (Orbost Spiny Crayfish) the “FMZ amendments in accordance with Table 4” must be applied. Table 4. requires that for records of Euastacus diversus (Orbost Spiny Crayfish), a SPZ extending 100m from each bank for 1 km upstream and 1 km downstream” must be established.

3. As a regulator of operations within Victoria's State Forests DELWP must ensure VicForests and their logging contractors abide by these prescriptions including by applying the minimum 100m Special Protection Zone (displayed in Results 2. Figure B.) for the Euastacus diversus (Orbost Spiny Crayfish) locations displayed and any others found within 1000m along a watercourse of VicForests' scheduled logging coupes. As the purpose of this legislative prescription is the protection of the waterways against the effects of logging.

4. DELWP must restrain VicForests from logging in the areas of these Euastacus diversus (Orbost Spiny Crayfish) records including within coupe 829-517-0002 as well as any additional surrounding areas where the species is present.

5. A thorough search for the presence of and evaluation of the extent and population health of Euastacus diversus (Orbost Spiny Crayfish) must be undertaken within any further areas where VicForests intends to log and the species presence is possible, tributary's within which Euastacus diversus (Orbost Spiny Crayfish) was recorded include the central part of the coupe and on the northern and southern boundaries of coupe 829-517-0002.

6. Protection must be afforded to threatened species and their habitat, this includes protection through the precautionary principle (as described in the code). If VicForests fail to conduct adequate and thorough surveys to ensure that threatened species are identified and then afforded protected by prescription the department must then restrain VicForests from conducting timber-harvesting operations within coupe 829-517-0002 and enforce protection through a precautionary approach for the threatened species that were failed to be identified, or failed to have adequate surveys conducted in a manner suitable for the species, or where there has been a failure to conduct thorough surveys for species across suitable habitat within the species distributional range

7. Post-survey analysis of the data sets VBA_FAUNA25, VBA_FAUNA100 and FMZ100 shows that prescriptions for the creation of a SPZ for the existing records of Euastacus diversus in this catchment have not been adhered to by the department.

8. The map of Results 2. Figure B. shows that logging is planned by VicForests along sections of the tributary's of the Rocky River where Euastacus diversus have been previously recorded within VBA_FAUNA25 and subsequently discovered recently, is within the required 100m SPZ buffer. The SPZ is a mandatory protection measure that must be afforded to the Euastacus diversus detection's detailed in this report.