

**The distribution and status of *Engaeus granulatus*
on Caroline Creek near Dulverton**

**Jane Griffith
Queen Victoria Museum and Art Gallery**

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QUEEN VICTORIA MUSEUM AND ART GALLERY

LAUNCESTON

THE DISTRIBUTION AND STATUS OF *ENGAEUS GRANULATUS* ON CAROLINE CREEK
NEAR DULVERTON

THE BRIEF

As outlined in a letter from Mr. S. Chidgey of the 26 October 1992 and modified in his facsimile of 4 November 1992 the revised brief was to investigate the distribution of *Engaeus granulatus* (a burrowing crayfish) in the proposed Dulverton regional waste centre and surrounding district, as indicated on the map supplied.

'The field survey should investigate and document possible locations of the burrowing crayfish in (i) the proposed development site, (ii) likely areas within 1 km of the development site, and (iii) other areas in different catchments of the Mersey River where you consider the burrowing crayfish may be found.'

DESCRIPTION OF THE SITES SURVEYED

For positions of the sites described please refer to the fold out map provided at the end of this report.

SITE 1 (EQ495288) This site, south of the gravel pits, was located along a drain that ran beside the Western Line. Natural vegetation was overhanging the creek and aquatic vegetation was present (Plate 1A). There was no perceptible current and the water was brown but clear. One burrow of *Engaeus granulatus* was located beside a tree root above water level (Plate 1B). Approximately 50 m north of this site along the drain another burrow was located.

SITE 2 (EQ485290) This site was located along a dried creek bed west of the gravel pits and it ran through a radiata pine plantation. One burrow of *Engaeus granulatus* was found along the bank of this creek.

SITE 3 (EQ486291) This site was located further along the same tributary as site 2 but a road bisected the creek (Plate 2A). Two small pools (approximately 1.5 m in diameter and 20 cm deep) of muddy water remained either side of the road. Numerous burrows were located in these areas (Plate 2B). Most burrows were characteristic of those excavated by *Engaeus granulatus* (see report by P. Horwitz) but there were some burrows that did not have the characteristic 'chimney' formed around the entrance (Plate 3). A juvenile of *E. granulatus* was extracted from one of the burrows. At least another 10 burrows of *E. granulatus* were located along another 20 m north of this tributary.

SITE 4 (EQ493295) This tributary issued from the largest of the two gravel pits. There was a lot of algal slime and a lot of clay silt in the water at the entrance of the creek into the gravel pit. Three burrows of *Engaeus granulatus* were located north of this entrance at the marked position and was near a road which bisected the creek (Plate 4A).

SITE 5 (EQ492296) This tributary ran through a young plantation of *Eucalyptus* sp. Pools of water existed along its course. One burrow of *Engaeus granulatus* was located in one of these pools (Plate 4B). This tributary was followed to site 6 (EQ495297) but no more burrows were located.

GRAVEL PIT (EQ492292) Although ponds of water with aquatic vegetation had developed in the largest gravel pit no burrows were found. The soil in the gravel pits was clay and possibly too 'boggy' for specimens of *Engaeus granulatus* to construct burrows.

SITE 7 (EQ496298) The water in this tributary of Caroline Creek north of the gravel pits ran beneath Dawson Siding Road and was running quickly. No burrows were found.

SITE 8 (EQ497298) This eastern tributary of Caroline Creek had water which was moving slowly. Although quiet pools of water that had formed along the side of the tributary and a drainage channel on the eastern side of the tributary were investigated for another 50 m northwards no burrows were found.

SITE 9 (EQ497293) followed to SITE 10 (EQ495291) These sites were located along the Caroline Creek which was a fast flowing creek. No burrows were found.

SITE 11 (EQ497280) Although no burrows were located in Caroline Creek itself, a small isolated pool of water on the north-west side of the creek was found to contain a burrow of *Engaeus granulatus*.

SITE 12 (EQ502310) This site was along a drain beside the Western Line approximately 1 km north of the proposed development site. Three burrows of *Engaeus granulatus* were located, one with a chimney approximately 5 cm high (Plate 5). An adult specimen of *E. granulatus* was obtained from this site.

SITE 13 (EQ507319) This site was located where Caroline Creek ran beneath Railton Road. It was situated amongst farm land approximately 2 km north of the proposed development site. No burrows were found.

SITE 14 (EQ506325) This area of the Mersey River approximately 2.5 km north of the proposed development site was surveyed but no burrows were found.

In addition to the sites mentioned all pools and drains that had formed alongside the numerous roads within the proposed site (most of which were not marked on any map) were also investigated but no further burrows were found.

CONCLUSIONS

A specimen of the burrowing crayfish *Engaeus granulatus* was obtained both from site 3, approximately 500 m west of the proposed development site and site 12, approximately 1 km north of the proposed development site. Burrows of *E. granulatus* were found to be distributed along the smaller tributaries of Caroline Creek, both within the proposed development site and in the surrounding district, including one tributary that issued from the largest gravel pit (site 4) and the ephemeral tributary on the west of the site that is to be relocated (site 5). No burrows were located along Caroline Creek itself.

The majority of burrows (approximately 80%) were located along the 'ephemeral western tributary' of Caroline Creek. Of these most were located in the upper reaches of this tributary at site 3. Relocating this tributary in the manner as described in the letter from Mr. S. Chidgey, to the western boundary of the site should not affect those crayfish at site 3 but could affect those at sites 4 and 5. However, in view of the findings that specimens of *Engaeus granulatus* can and do colonise man-made waterways (e.g. the drain along the railway track at site 12) the newly relocated tributary should be colonised by specimens of *E. granulatus* from the undisturbed habitat further upstream. The Queen Victoria Museum wishes to be contacted when relocation of this western tributary of Caroline Creek is to begin so that a staff member may be present to collect any specimens of *E. granulatus* that are inadvertently dug up.

PLATES

PLATE 1 Photographs of site 1 (EQ495288).

1A General area of site 1 in which a burrow of *Engaeus granulatus* was found.



1B Burrows of *E. granulatus* at site 1. Arrow points to entrance. Ruler is 30 cm long.



PLATE 2 Photographs of site 3 (EQ486291).

2A General area of site 3 in which numerous burrows of *Engaeus granulatus* were found.



2B Burrows of *E. granulatus* near pool of water. Arrows point to entrances. Ruler is 30 cm long.



PLATE 3 Photographs of burrows of *Engaeus granulatus* at site 3.

- 3A Burrow of *Engaeus granulatus* with characteristic 'chimney' around burrow entrance (arrow). Ruler is 30 cm long.



- 3B Two burrows of *E. granulatus* from site 3 which did not have a 'chimney' formation around the entrance. Ruler is 30 cm long.



PLATE 4 Photographs of burrows of *Engaeus granulatus*.

- 4A Three burrows of *E. granulatus* (arrows) at site 4 (EQ493295). Note the oil slick on the water (bottom left hand corner) and algal slime in that area. Ruler is 30 cm long.



- 4B Burrow of *E. granulatus* (arrow) at site 5 (EQ492296). Ruler is 30 cm long.



PLATE 5 Photographs of burrows of *Engaeus granulatus* at site 12 (EQ502310).

5A Burrow of *E. granulatus* (arrow) from which specimen was obtained. Ruler is marked in cm.



5B Two other burrows of *E. granulatus* (arrows) close to the one pictured above.



KEY

* SITE SURVEYED AND BURROWS WERE FOUND

X SITE SURVEYED BUT NO BURROWS WERE FOUND

GN: GRID NORTH



MAP OF THE PROPOSED SITE FOR THE DULVERTON REGIONAL WASTE CENTRE AND SITES SURVEYED.

