

Field inspection to assess Burrowing Crayfish Habitat at 63 Yarragon-Leongatha Road, Yarragon

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Prepared for

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1 BACKGROUND

In November 2018, Ethos NRM (Ethos NRM, 2018) undertook a Habitat Hectare assessment for Millar Merrigan associated with the rezoning and subdivision of 63 Yarragon – Leongatha Road, Yarragon (Ethos 2018, Figure 1). During this assessment, they identified the presence of burrowing crayfish chimneys at the site. Baw Baw Shire Council have requested further information regarding the identification of the species present.

INVERT-ECO was engaged by Millar Merrigan to undertake a brief assessment of the site to identify the crayfish present and determine if the site has the potential to support threatened burrowing crayfish habitat.

2 SCOPE OF WORKS

The scope of the investigation included:

- A review of the existing information to determine the likelihood of the site to support threatened burrowing crayfish;
- A brief site inspection to assess whether the site supports suitable threatened crayfish habitat;
- A visual inspection of the area for burrowing crayfish chimneys;
- Identification of burrowing crayfish

3 METHODS

A desktop review of the site was undertaken by;

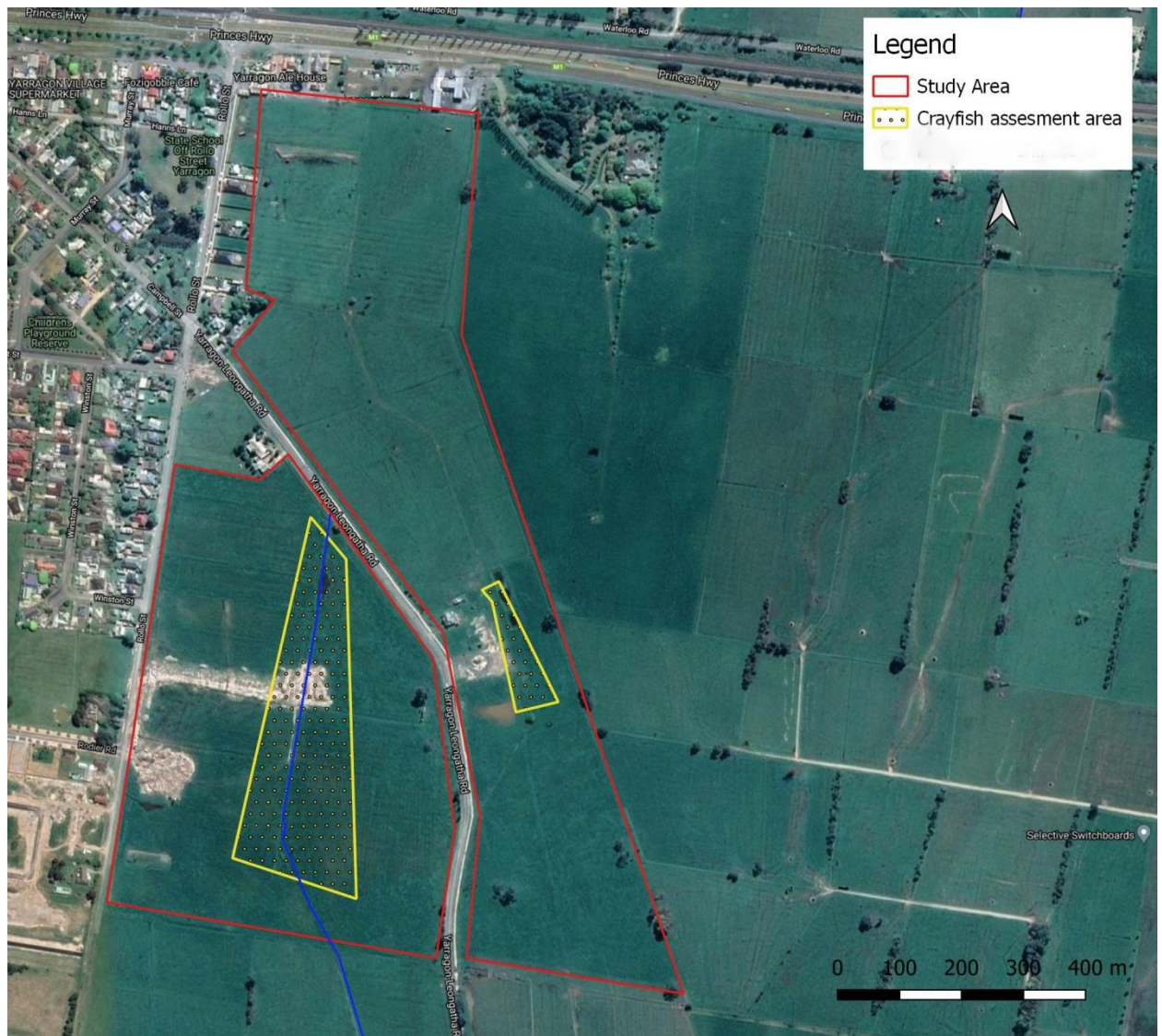
- » Reviewing burrowing crayfish locality records,
- » Reviewing available relevant reports,
- » Assessing the site for via aerial photography to determine whether the site supported potential crayfish habitat.

A site visit was undertaken on the 15th of July 2021. The field inspection was restricted to the drainage channel to the east of Yarragon-Leongatha Rd and the water-course to the west (Figure 2).

Figure 1 Location of study area at 63 Yarragon-Leongatha Rd, Yarragon (From Indigenous Design 2021)



Figure 2 Areas assessed for crayfish chimneys at 63 Yarragon-Leongatha Rd, Yarragon



4. FINDINGS

There are nine species of burrowing crayfish that occur within West Gippsland. Five of these are endemic to the region and three are listed as threatened under the *Victorian Flora and Fauna Guarantee Act 1988*. These include the Narracan, Strzelecki and Warragul Burrowing Crayfish. The listing of the Gippsland Burrowing Crayfish (*Engaeus hemicirratulus*) as Endangered under the Department of Environment, Land, Water and Planning (DELWP) threatened invertebrate Advisory List was an error and this species is considered common in South and Central Gippsland.

The range of the Warragul Burrowing Crayfish (*Engaeus sternalis*) occurs west of Darnum, approximately 8 km west of the study area, extending through to Labertouche (Van Praagh 2011). The Strzelecki Burrowing Crayfish (*Engaeus rostrogaleatus*) occurs in the highland region of the Eastern Strzelecki Ranges in altitudes over 400 m (Horwitz 1990). The closest record to the site occurs approximately 30 km to the east.

The closest recorded threatened species to the site is the Narracan burrowing crayfish (NBC) (*Engaeus phyllocercus*) (Plate 1). This species occurs within 5 km SE of the study area within the Sunny Creek Catchment. The NBC has been recorded over a 30 km area of the highland region to the north and west of the Eastern Strzelecki Ranges in South Gippsland (Horwitz 1990). Their habitat usually occurs in altitudes above 120m (Horwitz 1990). Burrows are typically located in the flood bed region of tree fern gullies, predominantly in Wet Forest EVC 49 (Horwitz 1990, Van Praagh and Hinkley 1999). During an assessment of the distribution of this species as part of the Regional Forest Agreement, Van Praagh and Hinkley (1999) noted the NBC habitat supported varying degrees of native vegetation ranging from small amounts of isolated, remnant forest to more extensive areas of native bush with a dense understorey or dominance of tree-ferns present at most sites (Plate 2).

The study area did not support any suitable NBC habitat with no natural watercourses and little remnant vegetation remaining. The study area is a low-lying swampy flat with small areas of Swampy Woodland (EVC 937) (ETHOS NRM 2018, Indigenous Design 2021). The site assessment by EHTOS concluded that the entire study site has historically been cleared of most native vegetation except for scattered trees, isolated patches of native understory plants and planted exotic trees. The alignment of the watercourses has been modified throughout the site and the waterway to the west of Yarragon-Leongatha Rd has undergone more recent additional modifications to construct a wetland at the northern end (Plate 3).

During the field assessment, very few burrowing crayfish chimneys were observed. Several chimneys were identified at one site in the clay soils of the unnamed creek west of Yarragon-Leongatha Rd (Figure 3 Plate 4). One specimen was collected for identification (Plate 4). This species is the common Granular or Lowland Burrowing Cray (*Engaeus cunicularius/quadrimanus*). They are difficult to distinguish in the field as identification is based on the proximodorsal granulations on the dactyl of the chelae (Horwitz 1999).

Given the highly modified nature of the site, the lack of suitable habitat and distance from the known range of the Narracan Burrowing Crayfish, it is highly likely that this site only supports the more common species of burrowing crayfish.



Plate 1 Narracan Burrowing Crayfish



Plate 2 Typical Narracan Burrowing Crayfish with ferny understory

Figure 1 Location of crayfish chimneys at 63 Yarragon-Leongatha Rd, Yarragon

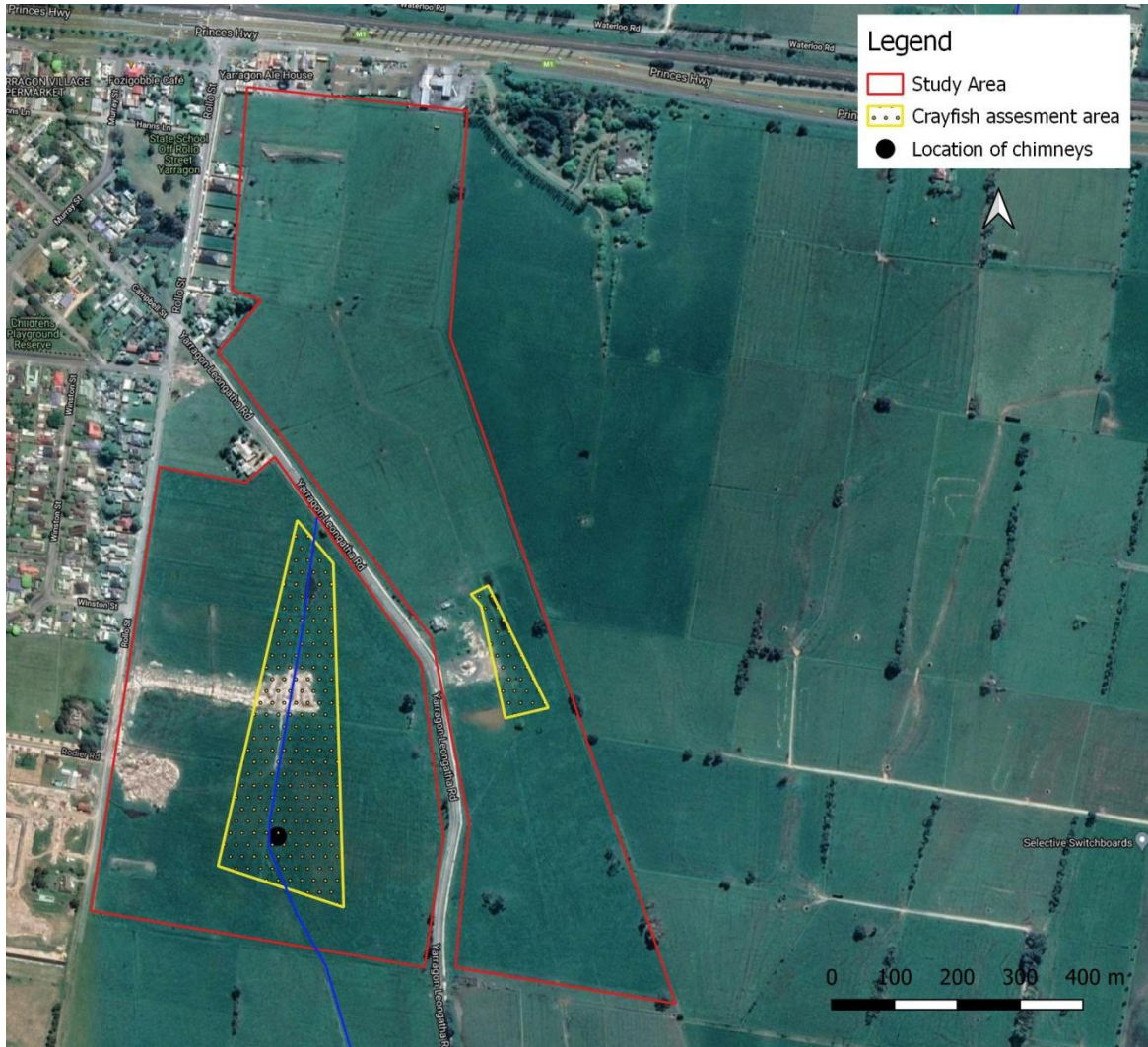




Plate 3 A) Modified watercourse assessed for crayfish habitat -east of Yarragon- Leongatha Rd)
B) West of Yarragon- Leongatha Rd, C) Site of crayfish burrows



Plate 4 A) & B) Crayfish chimneys recorded west of Yarragon- Leongatha Rd in modified watercourse C) Granular or Lowland Burrowing Cray

5. REFERENCES

- Brooker, T & Fuhrmann, A (2021), Native Vegetation Assessment for 300 lot subdivision at Yarragon - Leongatha Road, Yarragon. *Indigenous Design Environmental Management, Research, Victoria*. Indigenous Design Environmental Management
- Ethos NRM. (2018). *Habitat Hectare Assessment and Offset requirement*. Bairnsdale: Ethos NRM.
- Horwitz, P. (1990.) A taxonomic revision of species in the freshwater crayfish genus *Engaeus* Erichson (Decapoda: Parastacidae). *Invertebrate Taxonomy* **4**: 427-614.
- Van Praagh and Hinkley (1999) Distribution of four species of burrowing crayfish Warragul Burrowing Crayfish, *E. sternalis* Clark; Narracan Burrowing Crayfish, *Engaeus phyllocercus* Smith & Schuster; Strzelecki Burrowing Crayfish. *E. rostrogaleatus* Horwitz and Lilly Pilly Burrowing Crayfish, *E. australis* Riek in the Gippsland Regional Forest Agreement Area. Unpublished report to DNRE 1999
- Van Praagh, B. D.(2011) Baw Baw Shire Urban Growth Area Biodiversity Assessment and Mapping. Targeted survey for Warragul Burrowing Crayfish (*Engaeus sternalis*) and Narracan Burrowing Crayfish (*E. phyllocercus*). Unpublished Report to Baw Baw Shire Council April 2011.