

Fire impacts on burrowing and spiny crayfish

Burrowing Crayfish – *Engaeus* species

Crayfish of the genus *Engaeus* spend the majority of their lives underground in burrows. They are often called land yabbies. Most species construct characteristic chimneys made from balls of mud placed at the entrance of their burrow (see photo bottom middle). These chimneys are variable in size and can be as small as a few balls of mud to structures 40 cm high.



Gippsland Burrowing Crayfish (*Engaeus hemicirratulus*).
Photo: Beverley Van Praagh

Burrowing crayfish generally eat decaying organic matter in the soil, such as rotting leaves and twigs, but will also eat small worms or grubs. Unlike more commonly known crayfish such as the yabby, *Engaeus* do not spend much time in the open water and consequently often have a greatly reduced swimming tail (see photo above).

Spiny Crayfish – *Euastacus* species

Euastacus, commonly referred to as spiny crays, are characterised by heavy claws and spiny bodies. They inhabit freshwater streams and rivers of south-eastern Australia.

Euastacus are primarily herbivores but can be opportunistic feeders, supplementing their diet with animal matter when available. They are typically long lived and slow growers, making them prone to disturbance.

The South Gippsland Spiny Crayfish, endemic to streams in the southern Strzelecki Ranges and Wilsons Promontory is a threatened species. It has a brown/green upper body colour becoming paler along the lower sides. The underside is pale blue, green and cream.



South Gippsland Spiny Crayfish (*Euastacus neodiversus*).
Photo: David Bryant



Project background

Gippsland has a diverse crayfish fauna, comprising both burrowing and spiny crayfish. Ten species in these groups are threatened in the region. At least five of these species occur within the areas affected by the 2009 Bunyip, Churchill and Cathedral fires (see map below right). The impacts of the fires on these crayfish are currently unknown.

Assessing fire impacts is difficult as there is a lack of reliable and quantifiable sampling methods for these crayfish, particularly *Engaeus*. To address this, we will research and trial a range of survey methods.



High sediment levels following fire, Ovens River 2003.
Photo: Jarod Lyon.

Little is known about bushfire impacts on freshwater crayfish. After the 2003 fires, sediment slugs resulting from erosion caused large fish kills in the Ovens River. Spiny crayfish were forced from the water due to depleted oxygen levels associated with the sediment slug. Impacts on burrowing crayfish are harder to observe and quantify.

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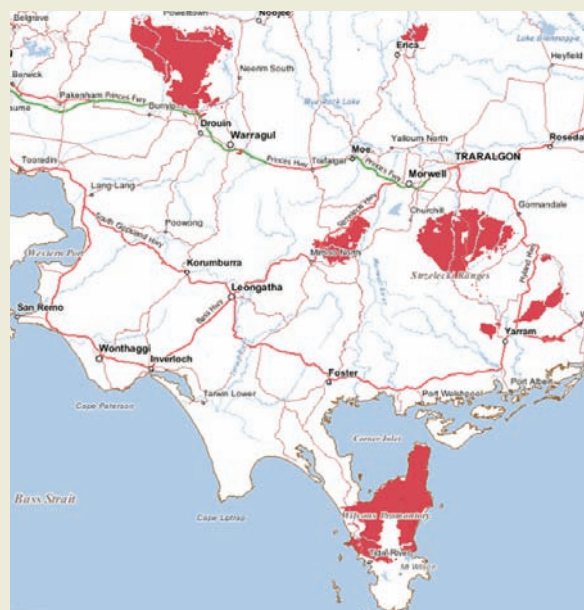
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Project aims

- Improve survey methods for burrowing (*Engaeus*) and spiny (*Euastacus*) crayfish
- Assess the impacts associated with the 2009 fires on *Engaeus* and *Euastacus*.
- Refine and update species distribution data.

The project activities include field surveys during spring 2010 and autumn 2011, production of a project report and a summary fact sheet by June 2011. A field day to share information with local communities will be conducted in March 2011.

Both burnt and unburnt areas will be surveyed to determine any effects of the fires. The study area will encompass the Wilsons Promontory, Churchill and Bunyip fire areas and also include neighbouring unburnt areas.



Study area with the 2009 fire areas shaded red.

Images front page along bottom (left to right):

- South Gippsland Spiny Crayfish habitat Photo: David Bryant
- South Gippsland Spiny Crayfish Photo: David Bryant
- *Engaeus* burrow chimney. Photo: Beverley Van Praagh
- Gippsland Burrowing Crayfish Photo: Diane Crowther

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