Threatened Species Link

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SPECIES MANAGEMENT PROFILE

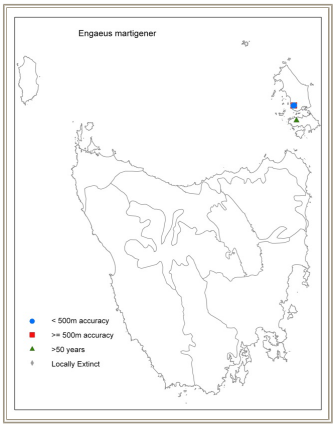
Engaeus martigener Furneaux Burrowing Crayfish

Group: Arthropoda, Malacostraca (crabs, lobsters, shrimps, woodlice), Decapoda, Parastacidae

Status: *Threatened Species Protection Act 1995*: vulnerable
Environment Protection and Biodiversity Conservation Act 1999: Endangered

Endemic Status: Found only in Tasmania

The Furneaux Burrowing Crayfish (*Engaeus martigener*) is a medium-sized burrowing crayfish; its carapace grows to a length of about 25 mm. The species is distinctively coloured with predominantly purple hues. The Furneaux Burrowing Crayfish is found only on Flinders Island and Cape Barren Island in Bass Strait. The species is found in fern-rich gullies on the mountains of Flinders Island (Mt Strzelecki and the Darling Range) and at Mt Munro on Cape Barren Island. The principal threat to the Furneaux Burrowing Crayfish is wildfire which has the potential to decimate the species' fire-sensitive habitat. The species is also vulnerable to extended periods of drought which also increases fire risk.



Key Points

- **Important:** Is this species in your area? Do you need a permit? Ensure you've covered all the issues by checking the Planning Ahead page.
- **Important:** Different threatened species may have different requirements. For any activity you are considering, read the Activity Advice pages for background information and important advice about managing around the needs of multiple threatened species.

Habitat

- 'Habitat' refers to both known habitat for the species (i.e. in or near habitat where the species has been recorded) and potential habitat (i.e. areas of habitat with appropriate characteristics for the species and within the species potential range which have not yet been adequately surveyed).
- If in doubt about whether a site represents potential habitat for this species, contact the Threatened Species Section for further advice.
- The known range of the Furneaux Burrowing Crayfish includes gullies on the upper slopes of mountains on Flinders Island (Mt Strzelecki and the Darling Range) and on Cape Barren Island (Mt Munro). The potential range of the Furneaux Burrowing Crayfish is not likely to extend beyond Flinders Island and Cape Barren Island, however the range of the species within these islands may be extended with additional survey.
- Note that burrowing crayfish can occur in areas where there has been a lot of human activity, and in places that are not near obvious standing or running water (i.e. they do not need to be in streams or obvious wetlands).
- Habitat for the Furneaux Burrowing Crayfish corresponds to 'Riparian bush' the DPIPWE Bushcare Toolkit. See the DPIPWE Bushcare Toolkit for more information on how to manage this vegetation type.
- Habitat for the Furneaux Burrowing Crayfish includes the following elements: in the low banks of the upper reaches of small creeks on Mt Strzelecki, in shallow, extensively ramifying burrows; the vegetation is characterised by soft tree fern *Dicksonia antarctica*, rough tree fern *Cyathea australis*, *Todia* species and other ferns, in sandy granitic soils; the burrows often have more than one opening (with small pelleted chimneys) and frequently ramify beneath rotting logs or the root matting of tree ferns.

What to avoid

- All fire in areas of habitat

Surveying

Key	Survey reliability more info
M	Peak survey period
M	Potential survey period
M	Non-survey period

To ensure you follow the law - check whether your survey requires a permit. Always report any new records to the Natural Values Atlas, or send the information direct to the Threatened Species Section. Refer to the Activity Advice: Surveying page for background information.

Species	Spring						Summer						Autumn						Winter					
Furneaux Burrowing Crayfish	S	S	O	O	N	N	D	D	J	J	F	F	M	M	A	A	M	M	J	J	J	J	A	A

- A permit may be required for examination of both living and dead crayfish material.
- Another species of burrowing crayfish, *Engaeus cunicularius* is also found in the creeks that support the Furneaux Burrowing Crayfish, but *E. cunicularius* is only found in lowland areas. There may be a point where the lowland species (*E. cunicularius*) and the highland species (Furneaux Burrowing Crayfish) overlap. The Furneaux Burrowing Crayfish can be distinguished from *E. cunicularius* by the presence of a patch of setae at the base of the fingers of the claw in *E. cunicularius*, and by the presence of pores on the lateral processes of the sternal keel at the third pereiopods in *E. cunicularius*.
- The presence of crayfish burrow entrances indicate that the species may be present at a site These often have a raised 'chimney' of surrounding mud (see examples of chimneys). However, definitive identification may require excavation of burrows and identification of actual specimens.
- Note that burrow excavation can be destructive to the animal involved and should only be carried out by a trained specialist with the appropriate permit and the ability to distinguish this species from other burrowing crayfish.
- Burrows of the Furneaux Burrowing Crayfish are visible all year and surveys can be carried out year-round. However, survey times should avoid periods of extreme dry or wet weather conditions. Burrows may be hard to spot during very dry periods when there is little activity on the surface, or when conditions are so wet that the chimneys are flooded or washed away.

Helping the species

- In order to recognise the species if it occurs on your property, learn to identify the signs of burrowing crayfish, such as burrow entrances with or without chimneys. If in doubt, seek expert assistance with identification.
- If you live or work in the area where the species occurs (see distribution map, above), look out for and record any observations of the species. All records of this species can provide important information on distribution and abundance.
- If you are interested in knowing for certain whether the species occurs on your land, organise a formal survey. You may need to employ an ecological consultant to do this. Your local Bushcare or Field Naturalist club may be able to assist you with a survey.
- Important! Always report any observations of the species to the DPIPWE Natural Values Atlas, or else provide the data direct to the Threatened Species Section. Records stored on the NVA are a permanent record and are accessible to other people interested in this species.
- Consider the needs of the whole habitat. Preserving a threatened species' habitat is the best way to manage both the species and the environment in which it lives.
- Habitat for the Furneaux Burrowing Crayfish corresponds to 'Riparian bush' the DPIPWE Bushcare Toolkit. See the DPIPWE Bushcare Toolkit for more information on how to manage this vegetation types.
- For long-term protection of populations on private land – consider protection of habitat through a vegetation management agreement or conservation covenant. See the DPIPWE Private Land Conservation Program for more details.

Cutting or clearing trees or vegetation

- Clearing of vegetation for forestry and agricultural are currently not a threat to the Furneaux Burrowing Crayfish, although this may change depending upon future decisions regarding such activities on the island, any future extensions to the known range of the species, and changes to the status of unallocated Crown land.
- To avoid permanent habitat loss - do not convert habitat (e.g. to plantation, pasture or cropping land).
- Partial removal of vegetation can also lead to drying out of soil, erosion, sediment input into waterways, and changes in water table levels and drainage.
- To avoid impacts on crayfish populations and their habitat – do not clear trees or other vegetation in areas of burrowing crayfish habitat.

Burning

- Wildfire presents a serious threat to the Furneaux Burrowing Crayfish. High levels of fuel throughout the Strezlecki National Park, and the lack of access for fire control means that high intensity burns may pose a danger to the species.
- The flora in the upper reaches of Fotheringate Creek (the first described locality of the species and supporting vegetation) has been identified as the most fire-sensitive, and persists as rainforest remnants largely due to the protection of the surrounding topography.
- The long-term viability of the species' habitat may also be vulnerable to a combination of fire and long periods of drought. Some level of fern die-off has already been observed under recent drought conditions on Flinders Island. Frequent burning of gullies on Cape Barren Island may produce a similar effect.
- To prevent permanent loss of habitat – avoid all burning in areas of habitat.

Changing water flow / quality

- Any activity which affects the level of the water table (including planting lots of vegetation at the site) can have major impacts on burrowing crayfish habitat. Remember that some activities can affect the level of the water table for a substantial distance around the site of the activity.
- To prevent loss of burrowing crayfish habitat - avoid activities which have an impact on water table levels in areas of burrowing crayfish habitat.
- Activities which result in a major deterioration in water quality can also damage burrowing crayfish habitat.
  Activities which can effect water quality include drainage works, earthworks, roading and stock access (all of which can lead to increased sediment reaching waterways), and the entry of chemicals into the waterway (e.g. fertiliser, herbicides and pesticides).
- To avoid impacts on crayfish populations and habitat – ensure weed control operations and the application of fertiliser do not lead to entry of chemicals into burrowing crayfish habitat.

- Activities which result in changes in drainage patterns or waterflow which can damage burrowing crayfish habitat. Activities which can affect drainage patterns and waterflow include roadworks and associated drainage works and removal of vegetation.
- To avoid impacts on crayfish populations and habitat – avoid activities which alter drainage patterns or waterflow in and around areas of habitat.

Further information

Check also for listing statement or notesheet pdf above (below the species image).

Recovery Plan

Tasmania's freshwater burrowing crayfish

Photos of burrowing crayfish 'chimneys'

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Contact details: Threatened Species Section, Department of Primary Industries, Parks, Water and Environment, GPO Box 44, Hobart, Tasmania, Australia, 7001. Phone (1300 368 550).

Permit: A permit is required under the Tasmanian *Threatened Species Protection Act 1995* to 'take' (which includes kill, injure, catch, damage, destroy and collect), keep, trade in or process any specimen or products of a listed species. Additional permits may also be required under other Acts or regulations to take, disturb or interfere with any form of wildlife or its products, (e.g. dens, nests, bones). This may also depend on the tenure of the land and other agreements relating to its management.