

SPECIES MANAGEMENT PROFILE

Engaeus granulatus Central North Burrowing Crayfish

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

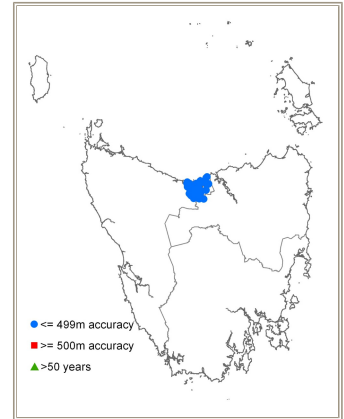
Status: *Threatened Species Protection Act 1995:* **endangered**
Environment Protection and Biodiversity Conservation Act 1999: **Endangered**

Endemic Status: Found only in Tasmania



Photo: Niall Doran

The Central North Burrowing Crayfish (*Engaeus granulatus*) is a medium-sized, burrowing crayfish, typically brownish and normally reaching a length of less than 10 cm. It is endemic to Tasmania, occurring only within a roughly rectangular area between the Mersey River and Port Sorell, northern Tasmania, in seepages, wetlands and stream banks. Usually all that can be seen of a burrowing crayfish is a burrow entrance, often with a raised 'chimney' of pelleted mud surrounding it. Much of its original habitat has been cleared, and the species now occurs in small isolated and fragmented populations within its original range amounting to less than 100 ha. The main threats to the Central North Burrowing Crayfish include activities which destroy or dry out its habitat, including residential development and inappropriate agricultural and forestry activities.



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 Central North Burrowing Crayfish includes a roughly rectangular area between the Mersey River and Port Sorell, northern Tasmania (see distribution map, above). The potential range for the Central North Burrowing Crayfish is unlikely to extend far outside the currently known range.
- 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 Central North Burrowing Crayfish includes the following elements: stream-side vegetation, seepages, vegetation around farm dams, roadside seeps and culverts, and sedgey marsh habitat.

What to avoid

- Habitat drying out
- Crushing crayfish or their burrows
- Changes in the water table

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.

<i>Engaeus granulatus</i>	Spring						Summer						Autumn						Winter					
Central North 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.
- Specimens of the Central North Burrowing Crayfish can be identified by surface granulations on the claws (similar to grains of sand). However, identification of specimens should be confirmed using a microscope and a range of features.

- Occasionally dead parts of crayfish such as the carapace (i.e. the outer shell) can be found on the surface of a colony which may be able to be identified by an expert.
- 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 Central North 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.
- In the areas where the species occurs, consider revegetation and fencing where streamside vegetation is degraded, and to protect waterways from erosion.
- 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

- Removal of vegetation can 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.
- To avoid permanent habitat loss - do not convert habitat (e.g. to plantation, pasture or cropping land).

Stock grazing and movement

- Stock can damage burrows and crush crayfish through trampling, and severely degrade burrowing crayfish habitat through the trampling of vegetation and compaction of soil.
- To protect crayfish populations from trampling by stock – fence off known habitat.

Use of heavy machinery and vehicles

- Use of heavy machinery (cars, trucks, earth-moving equipment, etc) within burrowing crayfish habitat can crush burrows and crayfish, and lead to severe damage to degradation of habitat through damaging vegetation and compaction of soil.
- To protect crayfish populations and their habitat – restrict use of heavy machinery through and within areas of habitat.

Dam construction

- To avoid total loss of populations – do not inundate known populations through dam construction.
- To avoid loss of habitat – ensure appropriate surveys are undertaken during the planning stage for dam construction in areas of habitat.

Subdivision

- Note that a number of activities associated with and following on from the subdivision of a property can lead to the drying out and loss of habitat. Refer to the Activity advice: Subdivision page for background information.
- To prevent drying out of habitat – avoid activities which alter the hydrology in areas of habitat, including removal of native vegetation, earthworks, construction and changes to drainage.

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 effect 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 effect 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.