

SPECIES MANAGEMENT PROFILE

Engaeus yabbimunna Burrowing Crayfish (Burnie)

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

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

Endemic: Found only in Tasmania

Status:

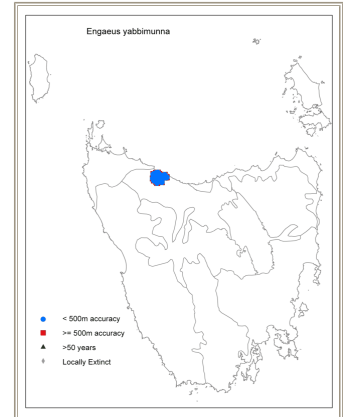


Photo: Niall Doran

The Burnie Burrowing Crayfish (*Engaeus yabbimunna*) is a medium-sized burrowing crayfish, typically reaching a length of around 6 cm. The species is endemic to Tasmania, occurring over an area of approximately 130 square km in and around the city of Burnie, north-west Tasmania. The Burnie Burrowing Crayfish is found in fern-dominated stream-side vegetation as well as in open and grassy sheep pasture, farm dams, roadside seeps and culverts, and sedgey marsh. The main threats to the Burnie Burrowing Crayfish include any activities which destroy or degrade the species' stream-side habitat, including such things as urban and agricultural pollution involving herbicides and pesticides, water diversion, forestry activities, roading and mining, and high-intensity burning of streamside habitat.

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 Burnie Burrowing Crayfish includes an area of approximately 130 square km in and around the city of Burnie, north-west Tasmania. Known localities include Burnie Park, Shorewell Creek, Romaine Creek and the eastern arm of Cooee Creek (all in urban Burnie), plus several localities to the west of Burnie including Seabrook, Camp Creek, Distillery Creek, and a small tributary of the Cam River.
- The potential range of the Burnie Burrowing Crayfish may extend beyond its currently known range, as there is a large gap (at least 18 square kilometres) separating the smaller eastern (urban) and larger western populations of the species, including the lower reaches of Distillery Creek, the Cam River, Messengers Creek and Cooee Creek (including the whole of the western arm).
- 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 Burnie Burrowing Crayfish includes the following elements: well-covered, slowly draining strips of fern-dominated native riparian vegetation; the species is known from stream banks and seepages retaining remnant riparian vegetation within Burnie; outside Burnie the species has been recorded in open and grassy sheep pasture, farm dams, roadside seeps and culverts, sedgey marsh, and some moderately disturbed stream sides.

What to avoid

- Habitat degradation in the urban environment (e.g. from water pollution, water diversion, removal of habitat)
- Clearing and conversion of non-urban habitat (e.g. for pasture or plantation)
- Soil disturbance and changes to drainage patterns (e.g. from roadworks and associated drainage works, clearing and conversion up-stream of habitat, hazard reduction and high-intensity fires)
- Off target damage from pesticides and herbicides
- Crushing crayfish or their burrows
- Activities that degrade river bank integrity and enhance erosion (e.g. alluvial mining)

Surveying

Key	Survey reliability more info
M	Peak 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

M	Potential survey period
M	Non-survey period

the Threatened Species Section. Refer to the Activity Advice: Surveying page for background information.

Species	Spring				Summer				Autumn				Winter											
Burnie 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.
- Other burrowing crayfish species bordering on or within the range of Burnie Burrowing Crayfish include *Engaeus fossor*, *E. cisternarius*, *E. cunicularius*, and *E. disjuncticus*. The Burnie Burrowing Crayfish is most likely to be found together with *E. fossor* or *E. cisternarius*; it can be distinguished from the former by the presence of a single row of tubercles on the dorsal surface of the propodus (rather than the two in *E. fossor*), and from the latter by its normal sized abdomen (compared to the reduced abdomen of *E. cisternarius*) and by the lack of long setae on the chelae.
- The presence of crayfish burrow entrances indicate that the species may be present at a site. These often possess 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 Burnie 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 localities 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 degradation of habitat through damaging vegetation and compaction of soil.
- To protect crayfish habitat – restrict use of heavy machinery through and within areas of habitat.

Burning

- Habitat can be degraded by any activities that have significant effects on water quality and drainage and siltation characteristics, including burning of habitat and up-stream of habitat.
- To prevent degradation of habitat – avoid high intensity fires in areas of habitat. Seek advice from the Threatened Species Section prior to conducting fuel reduction burns in areas of habitat.

Construction

- Habitat can be degraded by any activities that have significant effects on drainage and siltation characteristics, including roadworks and associated drainage works.
- To prevent loss and degradation of habitat – avoid roadworks and associated drainage works in areas of habitat.

Dam construction

- To avoid loss of crayfish populations – do not inundate known localities through dam construction.

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.

Mining

- Habitat can be degraded by any activities that have significant effects on water quality and drainage and siltation characteristics, including alluvial mining within areas of habitat and up-stream of habitat.
- To prevent degradation of habitat – avoid alluvial mining within areas of habitat and up-stream 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 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 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.

Use of chemicals

- Habitat can be degraded by any activities that have effects on water quality, including input of pesticides and herbicides into the waterway and ground water.
- To prevent degradation of habitat – avoid input of pesticides and herbicides into the waterway and ground water

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.