Threatened Species Link

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SPECIES MANAGEMENT PROFILE

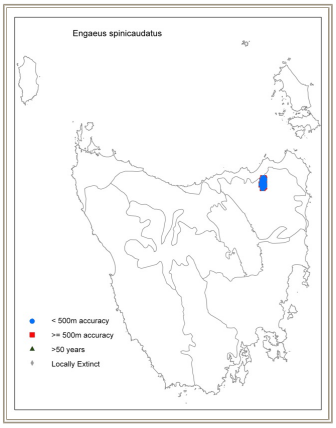
Engaeus spinicaudatus Scottsdale Burrowing Crayfish

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

The Scottsdale Burrowing Crayfish (*Engaeus spinicaudatus*) is a medium-sized burrowing crayfish with an adult carapace length of about 25 mm. It is usually brown or purplish in colour. The Scottsdale Burrowing Crayfish is found north of Scottsdale in north-east Tasmania. The species is primarily found in wet buttongrass and heathy plains, but also occurs in surface seepages, the floodplains of creeks, and wet areas converted to pasture. The principal threats to this species are clearance of native vegetation and lowering of the water table as a result of forestry and agricultural activities. Other threats include the downstream effects of road construction and quarrying, and the impacts of inappropriate fire management.



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 Scottsdale Burrowing Crayfish occurs north of Scottsdale within an area of approximately 35 square km. The species' range is closely bounded by the distributions of three other species of burrowing crayfish: *Engaeus mairener*, *E. tayatea*, and *E. leptorhynchus*. The known range of the Scottsdale Burrowing Crayfish has been well defined, and is unlikely to be extended further than the currently known range.
- Habitat for the Scottsdale Burrowing Crayfish corresponds to 'Buttongrass moorland' and 'Heath' in the DPIPWE Bushcare Toolkit. See 'Other bush types' in the DPIPWE Bushcare Toolkit for more information on how to manage these vegetation types.
- 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 Scottsdale Burrowing Crayfish includes the following elements: primarily found in wet buttongrass and heathy plains (particularly with peaty and saturated soils), but also occurs in surface seepages, the floodplains of creeks (often with scrubby or taller tea-tree vegetation), wet areas converted to pasture from any of the preceding habitat types, and some creekbanks in open dry eucalypt forest.

What to avoid

- Clearing and conversion of habitat (e.g. for pasture or plantation)
- Lowering of the water table (e.g. as a result of agricultural or forestry activities)
- Downstream effects of quarrying and road construction
- Trampling of pasture habitat by stock
- Crushing crayfish or their burrows
- Inappropriate fire management

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					
Scottsdale 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.
- The range of the Scottsdale Burrowing Crayfish overlaps with those of three other species of burrowing crayfish: *E. mairener*, *E. tayatea* and *E. leptorhynchus*, but it can be readily distinguished from all of these by the presence of median terminal spines on the outer elements (uropods) of the tail fan.
- The presence of crayfish burrow entrances indicate that the species may be present at a site. These often with 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 Scottsdale 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 Scottsdale Burrowing Crayfish corresponds to 'Buttongrass moorland' and 'Heath' in the DPIPWE Bushcare Toolkit. See 'Other bush types' in the DPIPWE Bushcare Toolkit for more information on how to manage these 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

- The principal threats to the Scottsdale Burrowing Crayfish are clearance of native vegetation habitat and lowering of the water table as a result of forestry and agricultural activities.
- 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 (e.g. buttongrass vegetation) in areas of burrowing crayfish habitat.

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 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 populations and their habitat – restrict use of heavy machinery through and within areas of habitat.

Burning

- Hot fires pose a direct threat to the peaty soils in which the Scottsdale Burrowing Crayfish is found, but the absence of fire may promote successional change and eventual drying of the buttongrass communities upon them.
- To prevent loss and degradation of habitat – avoid hot fires in areas of habitat, and seek advice from the Threatened Species Section on appropriate fire management of habitat.

Agriculture

- The principal threats to the Scottsdale Burrowing Crayfish are clearance of native vegetation and lowering of the water table, for example, as a result agricultural activities.
- To avoid permanent habitat loss - do not convert habitat (e.g. to 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 and other vegetation in areas of burrowing crayfish habitat on agricultural land.
- To avoid impacts on crayfish populations and their habitat – do not alter natural waterflow and drainage patterns in areas of habitat on agricultural land.

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 within and up-stream of habitat.
    - To prevent loss or degradation of habitat – do not alter natural drainage patterns within and upstream of crayfish habitat.

Quarrying

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

Use of chemicals

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