



THREATENED SPECIES LISTING STATEMENT

Mole Creek Cave Beetle, *Tasmanotrechus cockerilli*

Moore 1972

Status

Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.....Not listed

Tasmanian *Threatened Species Protection Act 1995*.....Rare

Description

The Mole Creek cave beetle is found only in caves; such species are referred to as ‘troglobites’. Troglotic beetles show varying degrees of adaptation to a cave existence, including loss of body colouring, a reduction or complete loss of eyes, and a lengthening of legs and other appendages. The Mole Creek cave beetle is small (body length approximately 6 mm), with an elongated head and vestigial eyes. For a full description refer to Moore (1972).

Distribution and Habitat

Tasmanotrechus cockerilli is known only from the Mole Creek karst system in central north Tasmania. Within this cave system it is fairly widely distributed, having so far been located in nine caves, however, the species is extremely rare in the caves where it has been found (Eberhard *et al.* 1991). A number of specimens of a beetle very similar to the Mole Creek cave beetle were also collected by Eberhard (2000) from six new cave sites within the Mole Creek karst system. These have been tentatively assigned to the same species. However, the specimens have yet to be formally identified as belonging to the species *T. cockerilli*.

The species is confined mostly to the deep cave zone, where it is found under stones, in or near flood litter, and on moist surfaces near water. Occasionally the species has also been found some distance from permanent water. The larvae of the species are found on flood-prone siltbanks beside streams (Eberhard *et al.* 1991).

Important Locations

Tasmanotrechus cockerilli is endemic to the Mole Creek karst system. To date, the species has been recorded from nine caves, including Georgies Hall, Herberts Pot, Kellys Pot, Scotts Cave, Marakoopa, Devils Drainpipe, Kubla Khan Cave, Genghis Khan

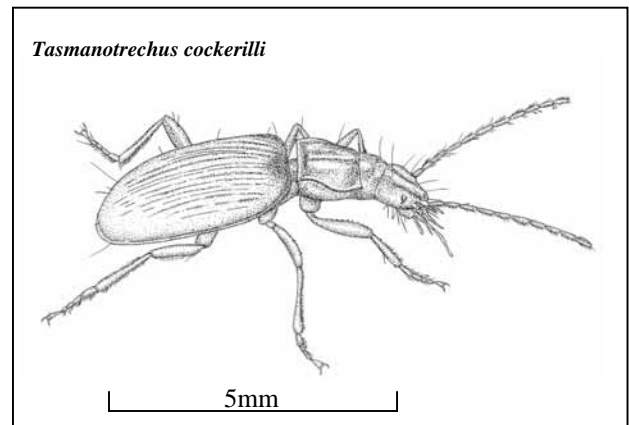
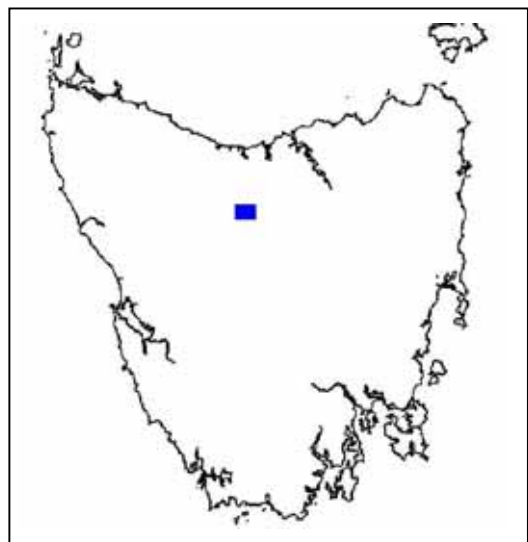


Illustration: Karen Richards



Known distribution of *Tasmanotrechus cockerilli*.

Cave and Little Trimmer cave. The Mole Creek karst system is vital to the survival of this species.

Threats, Limiting Factors and Management Issues

Quarrying, land-clearance and changes to drainage and water nutrient levels due to forestry and farming practices have been identified as potential threats to populations of *T. cockerilli*. The Mole Creek cave beetle is a very rare animal and likely to be subject to chance events which could significantly impact on a population within a cave. A number of the caves in which the species is known to occur are located on private land and are vulnerable to land practices which could threaten individual cave habitats. Trampling of individuals and degradation of cave habitat through trampling are also potential threats to this species which require further investigation.

Conservation Assessment

Historical Distribution

Little is known of the past distribution of the Mole Creek cave beetle. However, it appears likely that the species is naturally restricted to the Mole Creek karst system.

Area Currently Occupied

Mole Creek karst system

Population Estimate

Unknown but likely to be naturally low in numbers.

Reservation Status

A number of caves containing the Mole Creek cave beetle are located within Forest Reserves or the Mole Creek Karst National Park. Other known cave locations are on State Forest, private land or unreserved public land.

Assessment Criteria

Tasmanotrechus cockerilli meets criteria for listing as rare on the Tasmanian *Threatened Species Protection Act 1995* because the species is subject to stochastic risk of endangerment, is known from less than 10 locations, and has an area of occurrence of less than 2000 km².

Recovery Program

Objectives

- To protect existing Mole Creek cave beetle populations from adverse impacts

Previous Management Actions

- An invertebrate fauna survey of over 130 caves throughout Tasmania was carried out by Eberhard *et al.* (1991). This study confirmed the restricted distribution of this species to the Mole Creek karst system.

- An intensive survey of the invertebrate fauna of caves within the Mole Creek Karst National Park by Eberhard (2000) located a number of new cave locations for a beetle tentatively assigned to *T. cockerilli*.

Actions Needed

- Provide information on the location of the species to land managers to ensure no activities adversely affects the species.
- Undertake taxonomic work to formally identify the specimens collected by Eberhard (2000).
- Undertake further survey work to identify additional caves in which the species occurs.
- Undertake research to determine the habitat requirements of *T. cockerilli*.
- Conduct an investigation into, and regularly monitor, the condition of cave habitats.
- Investigate the impacts of cave users on the species.
- Facilitate research into the ecology of the species to determine population numbers, life cycle, diet and behaviour.

Source Material

References

- Eberhard, S. M. (2000). Reconnaissance survey of cave fauna management issues in the Mole Creek Karst National Park, Tasmania. Nature Conservation Report 2000/1, Department of Primary Industries, Water and Environment, Hobart.
- Eberhard, S. M., Richardson, A. M. M. and Swain, R. (1991). The invertebrate cave fauna of Tasmania. Zoology Department of Tasmania, Hobart.
- Moore, B. P. (1972). A revision of the Australian Trechinae (Coleoptera: Carabidae). *Australian Journal of Zoology: Supplementary Series*. **18**: 1-61.
- Parks and Wildlife Service (2004). *Mole Creek Karst National Park and Conservation Area Management Plan 2004*. Parks and Wildlife Service, Department of Tourism, Parks, Heritage and the Arts, Hobart.

Specialist Advice

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- Ian Houshold, Nature Conservation Branch, Department of Primary Industries, Water and Environment, Tasmania.

Review and Further Information

Statement prepared: June 2005

Prepared by: Stephen Mallick and Michael Driessen.

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Permit: It is an offence to kill, injure, collect or keep this species unless under permit from the Secretary, Department of Primary Industries, Water and Environment. Cave species are also protected under the *Nature conservation Act* 2002.