

Ida Bay Cave Beetle, *Idacarabus troglodytes*

Lea 1910



Status

Commonwealth *Endangered Species Protection Act 1992*Not listed
 Tasmanian *Threatened Species Protection Act 1995*Rare

Description

The Ida Bay cave beetle is the first troglobitic beetle discovered in Australia (Moore 1978). It is a small, reddish-coloured, obligate cave-dwelling, flightless beetle. It is 6.5-7.5 mm in length and has elongated legs and antennae. Males are slightly smaller than females but have slightly longer antennae and legs and have thicker forelegs. A complete description is given in Lea (1910).

Little is known about the life-history of the Ida Bay cave beetle or about other related species of cave beetle. Adults can be readily observed at anytime of year within the cave. Like many other carabids they are predatory, probably feeding on the larvae of glow-worms (Lea 1910). They may also prey on cave cricket eggs as they have been observed foraging in tiny holes made by the female cave crickets while laying eggs. The larvae of the Ida Bay cave beetle have not been identified.

Distribution and Habitat

The Ida Bay cave beetle belongs to a group of carabid cave beetles, the Zolini, which is confined to Australasia. The genus *Idacarabus* is represented by four described species *I. troglodytes*, *I. cordicollis*, *I. punctipennis* and *I. longicollis*, that are found in caves at Ida Bay, Hastings, Precipitous Bluff and Mt Roland Cross respectively. There are also several undescribed species (Eberhard *et al.* 1991).

The Ida Bay cave beetle only occurs in the Ida Bay Karst area of south-western Tasmania where it is widespread and relatively common. It may be found in various locations within a cave including the roof, floor, walls and siltbanks. It may be also found quite close to cave entrances, including the twilight zone (Eberhard *et al.* 1991).

Important Locations

The Ida Bay Karst area is important for the survival of the Ida Bay cave beetle.

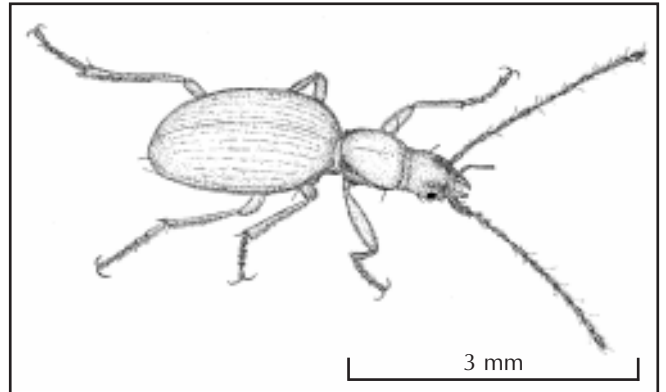


Illustration: Karen Richards



Known distribution of the Ida Bay cave beetle

Threats, Limiting Factors and Management Issues

Although most of Exit Cave occurs within the Southwest National Park, part of the cave also occurs within the Southwest Conservation Area and therefore is potentially vulnerable to operations such as mining and forestry. These operations have the potential to alter the flow or quality of water passing through the cave system. This would affect riparian zone species either by washing them out or more likely reducing the flow, hence reducing available habitat. Siltation would reduce habitat, cover and food sources or alter flows. The food chain within the cave systems is delicately balanced therefore altering the water is likely to have detrimental impacts on the entire fauna community.

A limestone quarry operation adjacent to Exit Cave was affecting water quality in the cave and had the potential to impact on the Ida Bay cave beetle. However, this quarry is now closed and the site is being rehabilitated.

Trampling of individuals and degradation of habitat are potential threats to the Ida Bay cave beetle.

Conservation Assessment

Historical Distribution

The Ida Bay cave beetle is naturally restricted to Ida Bay. It was first discovered by Lea (1910) and subsequent surveys (Eberhard *et al* 1991; Clarke 1997) have found the species to be widely distributed within the Ida Bay Karst area.

Area of Occupancy

Estimated to be less than 8 km² based on the area of the Ida Bay Karst area.

Population Size

Unknown

Reservation Status

Exit Cave is part of the Southwest National Park and the Southwest Conservation Area, both of which are included within the Tasmanian Wilderness World Heritage Area.

Assessment Criteria

Meets criteria for listing as rare on the Tasmanian *Threatened Species Protection Act 1995* because the species is subject to stochastic risk of endangerment because of naturally small population size. The Ida Bay cave beetle is known to occur in only one cave system at Ida Bay.

Recovery Program

Objectives

- To protect existing Ida Bay cave beetle habitat from adverse impacts

Previous Management Actions

- Exit cave was proclaimed a State Reserve in 1979 and included in the WHA in 1989. In 1990 it was incorporated into the Southwest National Park.
- In 1990 the limestone quarry adjacent to Exit Cave was closed due to adverse impacts of the quarry operation on the cave system. The quarry site is being rehabilitated.
- An invertebrate fauna survey of Exit Cave was conducted by Eberhard, *et al.* (1991) as part of an extensive study into the invertebrate fauna of over 130 caves throughout Tasmania. This study confirmed the restricted distribution of this species.
- Route markers and fauna sanctuaries were installed in Exit Cave to protect habitats and species (Eberhard 1999).
- Access to Exit Cave was restricted for the purposes of management planning between 1992 and 1998 under the Tasmanian *National Parks and Wildlife Act 1970*. The cave was re-opened to restricted recreational use.

Actions Needed

- Provide information on the location of the Ida Bay cave beetle to land managers to ensure no activities adversely affects the species.
- Establish a program to monitor the impacts of recreational users on the distribution and abundance of the species.

- Facilitate research into the ecology of the species to determine population numbers, life-cycle, diet, behaviour and preferred habitat. Research will be restricted to methods that will not significantly impact on the population.

Source Material

References

Eberhard, S. M. 1990. Ida Bay Karst Study: The Cave Fauna at Ida Bay in Tasmania and the Effect of Quarry Operations. Report to Department of Parks, Wildlife and Heritage, Tasmania.

Eberhard, S., Richardson, A. M. M. and Swain, R. 1991. The Cave Invertebrate Fauna of Tasmania. Zoology Department, University of Tasmania, Hobart. 174pp.

Eberhard, S. M. 1999. Cave Fauna Management and Monitoring at Ida Bay, Tasmania. Nature Conservation Report 99/1. Parks and Wildlife Service, Tasmania, 37pp.

IUCN Species Survival Commission 1994. IUCN Red List Categories, *IUCN Species Survival Commission*. Nov. 1994.

Lea, A. M. 1910. On some Tasmanian Cave-inhabiting Beetles. *The Tasmanian Naturalist*. 2: 53-58.

Moore, B. P. 1978. A new species of the Tasmanian caver carabid genus *Idacarabus* (Coleoptera). *Australian Entomologist Magazine*. 5(2): 23-25.

Moore, B. P. 1994. New species and new records of Tasmanian cave carabidae (Coleoptera). *Australian Entomologist* 21(3): 75-80.

Review and Further Information

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Prepared by: Michael Driessen, Maria Moore and Karen Richards

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Permit: It is an offence to collect, possess or disturb this species unless under permit from the Director, Parks and Wildlife Service.

