



THREATENED SPECIES LISTING STATEMENT

Lake Pedder and McCubbins Caddis-flies, *Taskiropsyche lacustris* and *Taskiria mccubbini*

Neboiss 1977

Status

Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i>	Not listed
Tasmanian <i>Threatened Species Protection Act 1995</i>	Endangered

Description

Caddis-flies are typically inconspicuous, relatively dull-coloured insects that are important components of Tasmania's freshwater ecosystems. The larvae of caddis-flies are aquatic and the majority of adult caddis-flies are associated with fresh water. The larvae of many species live in portable cases built from a variety of materials including sand grains and plant fragments.

There are 480 known species of caddis-fly in Australia belonging to 25 families. The Lake Pedder and McCubbins caddis-flies are two of only three Tasmanian species in the family Kokiriidae. The third species, *Taskiria austera*, is closely related to McCubbins caddis-fly.

Males of both species are dark brown in colour with black eyes and of moderate size (length of anterior wing ranges between 8.5-9.5mm). The length and number of spurs on their tibia can distinguish the two species. The Lake Pedder caddis-fly has short tibial spurs with only one spur on the anterior tibia. McCubbins caddis-fly has long tibial spurs with two spurs on the anterior tibia. A complete taxonomic description of each species is given in Neboiss (1977).

As only a few adult male specimens have been collected, the life cycle can only be speculated from the general Kokiriidae pattern (StClair 2000). Adults of both species have been collected in February indicating the species fly during summer. Eggs are probably laid on or near water during summer. The larvae live in water and are likely to be present throughout the year. In the closely related species, *T. austera*, larval cases are made of plant fragments and sand; the larva and the case is up to 2 cm long. Pupation takes place underwater in the larval case. Pupation in the Lake Pedder and McCubbins caddis-flies probably occurs in late winter or spring.

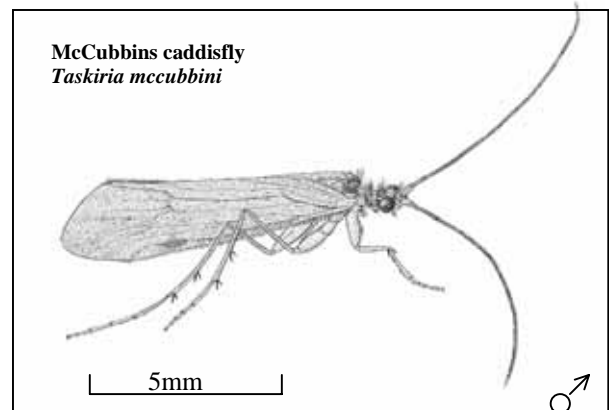


Illustration: Karen Richards

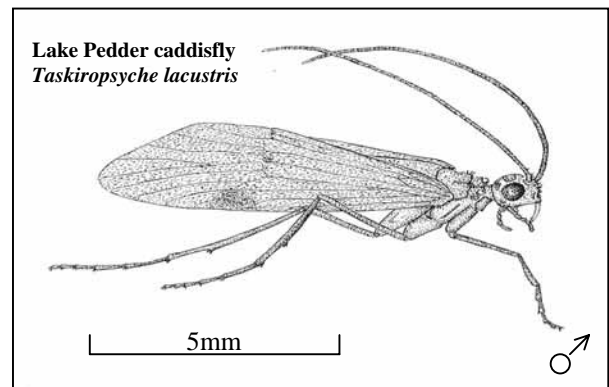
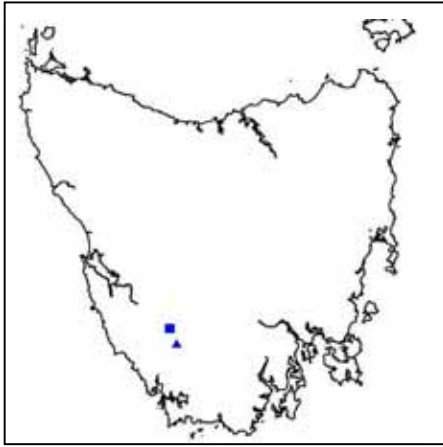


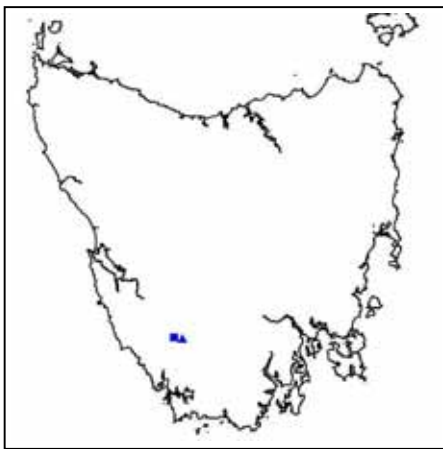
Illustration: Karen Richards

Distribution and Habitat

The Kokiriidae have a Gondwanan distribution, occurring in Tasmania, Victoria and New Zealand. Only three genera are known from Australia, two of which occur in Tasmania.



Past ▲ and present ■ distribution of *Taskiropsyche lacustris*.



Past ▲ and present ■ distribution of *Taskiria mccubbini*.

The original location for the Lake Pedder and McCubbins caddis-flies was Lake Pedder. All specimens were collected from the sandy bottom of shallow waters along the eastern shore of the original lake in February 1965. A survey by Jackson (2000) collected two McCubbins caddis-flies on the shore of the Lake Pedder impoundment, and a single Lake Pedder caddis-fly from a small stream near Gordon Road. The habitat of the larvae of these two species appears to be runnels or swamps around the Lake Pedder impoundment and/or the shore of the lake itself.

Important Locations

The shoreline and the runnels and swamps around the present Lake Pedder impoundment are important for the survival of these two species.

Threats, Limiting Factors and Management Issues

Much of the original habitat of the Lake Pedder and McCubbins caddis-flies was destroyed with the flooding of the original Lake Pedder. Two surveys subsequent to flooding (Chilcott 1988; Neboiss 1989) failed to locate the two species, while the most recent survey (Jackson 2000) collected only three specimens. The McCubbins caddis-fly site on the shore of Lake Pedder may be vulnerable to fluctuating water levels and predation from brown trout (*Salmo trutta*). The site where the Lake Pedder caddis-fly was collected near Gordon Road is vulnerable to any roadworks in the area (Jackson 2000).

Conservation Assessment

Historical Distribution

Little is known about the historical distribution of the Lake Pedder and McCubbins caddis-flies. Compared with most other invertebrate groups, a considerable number of trichopteran surveys have been conducted in Tasmania. It is therefore possible that these species are naturally restricted to the area around Lake Pedder.

Area Currently Occupied

The only known extant locations for the Lake Pedder and McCubbins caddis-flies are a small stream about 100 m west of Teds Beach turnoff, Gordon Road and a single site on the shore of Lake Pedder north of Forest Creek. However, the two species are possibly more widespread in runnels and swamps and along the shore of the current lake impoundment.

Population Estimate

Unknown

Reservation Status

Lake Pedder occurs in the Southwest National Park which is part of the Tasmanian Wilderness World Heritage Area. However, the lake is managed for hydro electricity and is subject to un-natural fluctuations in water level.

Assessment Criteria

Taskiropsyche lacustris and *Taskiria mccubbini* meet the criteria for endangered on the Tasmanian *Threatened Species Protection Act 1995* because of the very small number of known populations (one in each case) and the limited area of occurrence (within 100 m of the Lake Pedder impoundment).

Critical Habitat

Within 100 m of the shoreline of Lake Pedder.

Recovery Program

Objectives

- To protect known and potentially suitable habitat on the shoreline around Lake Pedder.
- To locate additional extant populations of the two species around the Lake Pedder area.

Previous Management Actions

- There have been several surveys for caddisflies in Tasmania. Neboiss (1977) surveyed 130 localities in Tasmania between 1965 and 1974, while Neboiss *et al.* (1989) collected caddisflies over eight days in February at 61 sites in western Tasmania. Chilcott (1988) surveyed specifically for the Lake Pedder and McCubbins caddisflies at Scotts Peak Dam road and at several sites adjacent to the original Lake Pedder. Most recently, the survey by Jackson (2000) specifically targeted threatened species of caddisfly from the Tasmanian World Heritage Area.

Actions Needed

- Ensure the protection for all known sites and any potential habitat in the Lake Pedder area.
- Conduct further surveys for the two species targeting runnels and swampy areas and the shoreline around Lake Pedder.
- Conduct further surveys around other lakes with similar habitat to the original Lake Pedder (for example Lakes Cygnus, Oberon and Rhona).
- Fully describe the habitat of known locations to assist in their protection and to facilitate further searches.
- Undertake research on the ecology of the two caddis-fly species to determine life cycle, habitat requirements, population numbers and potential threats.

Source Material

References

- Chilcott, S. (1988). Examination of the status of endangered species of Trichoptera (caddis-flies) in the Lake Pedder area. In W. Fulton (Ed.) Further collections of freshwater fauna from the World Heritage Area, Tasmania. *Inland Fisheries Commission Occasional Report* 88-03.
- Jackson, J. (2000). Threatened Trichoptera (caddisflies) from the Tasmanian Wilderness World Heritage Area. *Papers and Proceedings of the Royal Society of Tasmania* **134**: 55-61.
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- Neboiss, A., Jackson, J. and Walker, K. (1989). Caddisflies (Insecta: Trichoptera) of the World Heritage Area in Tasmania – species composition

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StClaire, R. M. (2000). Preliminary keys for the identification of Australian caddisfly larvae. Identification Guide No. 30. Murray-Darling Freshwater Research Centre, Albury.

Specialist Advice

- Dr. Jean Jackson, Inland Fisheries Service, Tasmania.

Review and Further Information

Statement prepared: (updated) June 2005

Prepared by: Michael Driessen and Stephen Mallick.

Review date: When new information received.

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Further information: Threatened Species Unit, Nature Conservation Branch, GPO Box 44 Hobart Tasmania Australia 7001. Ph 03 62 33 6556. Fax 03 62 33 3477.

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