

# Action Statement

Flora and Fauna Guarantee Act 1988

No. 91

## Warragul Burrowing Crayfish *Engaeus sternalis*

### Description and Distribution

The Warragul Burrowing Crayfish, *Engaeus sternalis* (Clark 1936) is endemic to Victoria. Like most other burrowing crayfish, it is a small freshwater species, with a total length of about 70mm. It is described in detail in Horwitz (1990a).

The location of the type specimen was recorded as 'Warragul 1889' (Clark 1936). The only known current locations of the species are on Labertouche Creek and Wattle Creek (a tributary of Labertouche Creek) in West Gippsland. The creeks flow through predominantly cleared grazing land. Remnant patches of indigenous vegetation, some of which is in a relatively natural condition, and scattered eucalypts (*Eucalyptus viminalis* and *E. ovata*) are present along the creek. Two sites are on private land, and one is within Crown land recommended for reservation by the Land Conservation Council (LCC 1994, Morey and Shaw *pers comm.*).

### Conservation Status

#### Current status

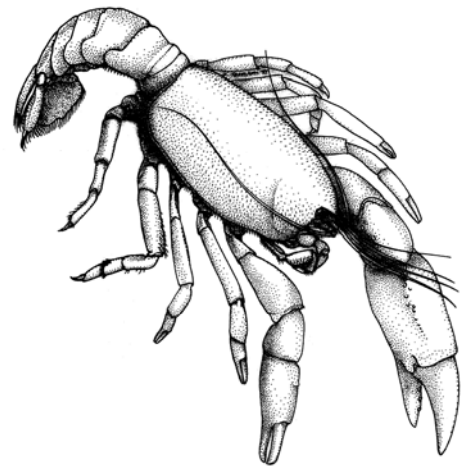
Australia: Vulnerable (Horwitz 1990a)

Victoria: Threatened (FFG Act, SAC 1992)

The Warragul Burrowing Crayfish has been listed as a threatened taxon in Schedule 2 of the **Flora and Fauna Guarantee Act 1988**.

#### Reasons for conservation status

The Warragul Burrowing Crayfish appears to have an extremely limited distribution, despite extensive searches (Horwitz 1990a, b). Virtually nothing is known of the ecology, population dynamics and habitat requirements of the species. It is thought indigenous vegetation removal, cattle trampling of



Warragul Burrowing Crayfish, *Engaeus sternalis*,  
(approximately x1.5 natural size)  
illustration by Kate Nolan



**Distribution in Victoria**  
+ before 1970, ■ since 1970  
[from Atlas of Victorian Wildlife, NRE 1998]

both the ground and creek banks and alteration of the watertable may adversely affect the species.

In its final recommendation the Scientific Advisory Committee (SAC 1993) has determined that the Warragul Burrowing Crayfish is:

- significantly prone to future threats which are likely to result in extinction, and
- very rare in terms of abundance or distribution.

### Major Conservation Objectives

The major conservation objectives are to:

- protect known sites from further deleterious activities, and
- identify and manage likely threats to the survival and evolutionary development of the species and its habitat.

### Management Issues

#### Ecological issues specific to the taxon

Most of the creek frontage at the known locations is unfenced and where cattle have had unrestricted access to creeks in the catchment the understorey is virtually absent. Cattle has been grazed in the area for the past 100 years (B. Whiting *pers comm.*). Cattle may have affected the species by compacting the ground and possibly collapsing the crayfish's tunnels as well as causing streamside erosion, bank damage and loss of native vegetation.

Gold-mining was apparently conducted along the creek and its tributaries earlier this century. Rock is still mined within the catchment.

Alteration to the current drainage pattern may lower the watertable and have an impact on the species. It is not known how critical the persistence of native vegetation is to the survival of the species.

Little is known of the biology of the species.

#### Wider conservation issues

Protecting riparian vegetation will also help to improve water quality and prevent streambank erosion.

Numerous native fish species, including the River Blackfish, galaxids and smelt inhabit the Labertouche Creek catchment (Raadik *pers. comm.*), along with five other species of crayfish (three burrowing species, *Engaeus quadrimanus*, *E. cunicularius*, and *E. hemicirratulus*, and two freshwater spiny crayfish species, *Euastacus yarraensis* and *E. kershawi*). Because it supports six crustacean species and possible a seventh (the freshwater spiny crayfish *Euastacus woiwuru*), Wattle Creek might well support the most diverse

crayfish aggregation known in Australia (Morey and Hollis 1997, Horwitz *pers. comm.*).

### Social and economic issues

There are no Crown land river frontages on Labertouche Creek or the tributaries upstream from its confluence with Wattle Creek. The adjacent landholders own and control land to the water's edge. There are leased Crown land frontages downstream from the junction with Wattle Creek. Fencing the creeks to protect crayfish habitat would therefore reduce the amount of land available for grazing and cropping.

### Previous Management Action

Intensive surveys were undertaken recently for the species over a wide area (Morey and Hollis 1997). A community education and awareness component was implemented by NRE in 1995. An information brochure on the Warragul Burrowing Crayfish was distributed to all landholders within the Labertouche Creek catchment, and meetings were also held with landholders and the local Labertouche Landcare group.

Some of the known habitat was fenced to help restrict access for cattle to the creek.

One site known to support the species, in natural bush on Crown land, was recommended for reservation as an 'area of natural interest' by the Land Conservation Council in 1994 (LCC 1994) but is yet to be gazetted (Morey *pers. comm.*).

### Intended Management Action

1. Coordinate research and surveys at other locations within the Labertouche Creek catchment and adjacent catchments, to estimate the population size, determine its ecological requirements, investigate its reproductive biology, and determine the ecological relationships with other sympatric decapods.
2. Set aside the Crown land on Labertouche Creek containing remnant vegetation that has been recommended for reservation by the LCC, as a Flora and Fauna Reserve, managed by Parks Victoria.
3. Determine appropriate buffer width of riparian vegetation required to protect the species, and encourage land managers and landholders to fence off direct access to creeks for cattle, and to re-establish indigenous riparian vegetation.

## **Other Desirable Management Action**

4. Coordinate research into the risk posed by trout predation.
5. Encourage landholders in the catchment to join the *Land for Wildlife* program, and advise local land managers and landholders about the presence of the species and the effect of existing management practices on the species.

## **Legislative Powers Operating**

### **Legislation**

**Catchment and Land Protection Act 1994** - provides for the integrated management and protection of catchments, community participation in the management of land and resources.

**Conservation Forests and Lands Act 1987** - provides for the management of public land under the Act, the coordination of legislation administered by NRE and for the preparation of codes of practice.

**Crown Land (Reserves) Act 1978** - provides for reserving areas as public land and for making a specific reservation status for existing public land.

**Environment Protection Act 1970** - provides for control of material released into rivers and streams.

**Extractive Industries Development Act 1995** - ensures that extractive industry operations are carried out with safe operating standards and in a manner that ensures the rehabilitation of quarried land to a safe and stable landform, and provides a co-ordinated assessment and approvals process for extractive industries. It also provides a procedure for notification of proposed extractive industries to licence holders under the **Mineral Resources Development Act 1990**.

**Fisheries Act 1995** - provides controls for the management of fisheries and defines crustacea as fish.

**Flora and Fauna Guarantee Act 1988** - provides for the protection of flora and fauna in Victoria through a range of mechanisms including controls over the handling of listed fish. The Warragul Burrowing Crayfish is a protected species under this Act. This Act regulates the taking of listed taxa from the wild and has provisions for preserving habitat and promoting conservation actions.

**Local Government Act 1958** - provides for local council by-laws and conservation regulations (eg. permit requirement for land clearing).

**Mineral Resources Development Act 1990** - provides for the management of mineral resources

and includes controls over exploration and mining activities to minimise impacts on the environment.

**Planning and Environment Act 1987** - provides for the protection of native vegetation through the State section, and for regional planning controls in all planning schemes.

**Water Act 1995** - provides for the allocation of water for environmental requirements.

### **Licence/permit conditions**

Permits for taking or collection will be issued only for the purposes of research which will provide information useful for the protection and management of the species.

### **Consultation and Community Participation**

An information brochure on the species and ways of helping to protect its habitat has already been distributed to all landholders within the catchment.

Continuing consultation with landholders and local community groups will play an integral role in the management of the Warragul Burrowing Crayfish and its habitat.

### **Implementation, Evaluation and Review**

The Regional Manager in Gippsland where the Warragul Burrowing Crayfish occurs will coordinate the implementation of this action statement. Primary responsibility for implementation and assessment of the effectiveness of the management actions lie with the Flora and Fauna officers. The relevant Catchment Management Authorities will be kept informed of progress in the implementation of this Action Statement.

In accordance with the major conservation objectives, the results of monitoring will be assessed in 2002. The Action Statement will be reviewed by 2004.

### **Contacts**

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Further information can be obtained from Department of Sustainability and Environment Customer Service Centre on 136 186.

Flora and Fauna Guarantee Action Statements are available from the Department of Sustainability and Environment website: <http://www.dse.vic.gov.au>

This Action Statement was first published in 1999 and remains current. This version has been prepared for web publication. It retains the original text of the action statement, although contact information, the distribution map and the illustration may have been updated.

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