



Image: Spencer & Richards ©

Enchymus sp. nov.

Weldborough forest weevil

TASMANIAN THREATENED SPECIES LISTING STATEMENT

Common name: Weldborough forest weevil

Scientific name: *Enchymus* sp. nov. Zimmerman, 1991

Group: Invertebrate, Insecta, Coleoptera, Curculionidae

Status: *Threatened Species Protection Act 1995:* **Rare**

Environment Protection and Biodiversity Conservation Act 1999: **Not listed**

Distribution: Endemic status: **Endemic to Tasmania**

Tasmanian NRM Region: **North**

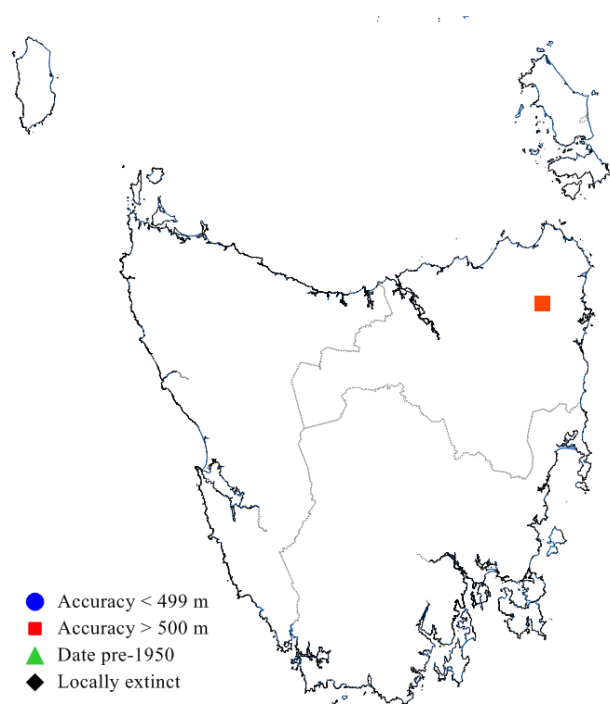


Figure 1. Distribution of the Weldborough forest weevil, including NRM regions



Plate 1. Weldborough forest weevil (Image: Spencer & Richards ©)

SUMMARY: *Enchymus* sp. nov. (Weldborough forest weevil) is a medium-sized beetle, known only from a handful of locations on Blue Tier and near Weldborough in northeast Tasmania. It occurs in rainforest dominated by *Nothofagus cunninghamii* and mixed forest (eucalypt forest with a high component of myrtle). The Weldborough forest weevil is a canopy feeder specialising on its food plant *Nothofagus cunninghamii* (myrtle). Limited knowledge of the extent of the population and on the biology of the species hinders the options to manage the species effectively.

The main threats to the species include clearing of habitat for agriculture and plantations, forestry, fire and introduction of fungal pathogens (myrtle wilt).

IDENTIFICATION AND ECOLOGY

The Weldborough forest weevil (*Enchymus* sp. nov.) belongs to the family Curculionidae, which is known as the “true” weevils (or sometimes “snout beetles”). It is one of the largest families of animals in the world with over 40,000 described species. The family is recognised by their distinctive long snout and geniculate (bent) antennae with small clubs. The Curculionidae is represented by a considerable diversity of form and size, with species ranging from 1 to 40 mm. The taxonomy of the tribe is currently under review, and it is likely that the genus to which this species is attributed will be changed (S. Grove pers. comm.).

Weevils are almost entirely plant feeders, and most species are associated with a narrow range of hosts, in many cases only living on a single species. The Weldborough forest weevil is a canopy-dwelling species, adults of which feed on *Nothofagus cunninghamii* foliage. Nothing is known about the larvae, but it is likely they are wood borers in the host plant *Nothofagus cunninghamii*.

The Weldborough forest weevil (Plate 1) is a medium-sized canopy-dwelling beetle, dull brown-grey in colour with a body length of about 10–12 mm (Zimmerman 1991, Richards & Spencer 2017).

Many weevil species are long-lived, however, the Weldborough forest weevil is only active for a short period in late spring/early summer and occurs at a low population density. These life history characters have made the family susceptible to population loss and a number of species from New Zealand are presumed extinct due to human-induced land use change and introduced predators. Several species from southern Australia reported from the nineteenth century have not been recorded for many decades.

Survey guidelines

Survey methods for this species include canopy fogging, foliage beating and/or visual foliage searching. Positive identification requires specialist expertise.

Confusing species

There are several species of Curculionidae in Tasmania that are similarly sized and coloured and may be superficially confused with the Weldborough forest weevil. Although many weevils possess 4 processes toward the apex of the elytra (wing covers), the Weldborough forest weevil is distinguishable by the shape and orientation of the 4 acute processes.

DISTRIBUTION AND HABITAT

The Weldborough forest weevil is endemic to Tasmania (Figure 1, Table 1), known from only 11 localities with an extent of occurrence of 6.1 km² in the vicinity Weldborough and the Blue Tier, west of St Helens. Its area of occupancy is unknown. All known records were collected from rainforest dominated by *Nothofagus cunninghamii* (myrtle) and mixed forest i.e. wet eucalypt forest with an understorey of rainforest species including myrtle and sassafras (*Atherosperma moschatum*) (Plate 2).

The Weldborough forest weevil was originally known from a single locality 4.4 km southeast of Weldborough (Zimmerman 1991) where two specimens were collected in a pitfall trap. Subsequently, additional specimens have been recorded at sites on Blue Tier, collected by canopy beating or visual assessment (J. Keble-Williams 2012, ANIC data, Spencer & Richards 2017).

Table 1. Population summary for the Weldborough forest weevil

	Subpopulation	Tenure	NRM Region	1:25000 Mapsheet	Year last (first) seen	Number of individuals observed
1	4.4. km southeast of Weldborough	Crown Land	North	Ringarooma 5643	1980	2 collected
2	Mt Michael, Blue Tier	Blue Tier Forest Reserve	North	Blue Tier 5843	1989 2016	5 collected 10 collected
3	nr Mt Littlechild, Blue Tier	Blue Tier Forest Reserve	North	Blue Tier 5843	1999 2016	1 collected
4	Australia Hill	Blue Tier Forest Reserve	North	Blue Tier 5843	2018	1 observed
5	Poimena (5 sites)	Blue Tier Forest Reserve	North	Blue Tier 5843	2016 2018	Multiple observed
6	Full Moon Creek, Poimena	Blue Tier Forest Reserve	North	Blue Tier 5843	2017	1 observed

NRM region = Natural Resource Management region

Considerable sampling of ground-dwelling weevils has been undertaken in Tasmania (e.g. Richards & Spencer 2005, McQuillan pers. comm.) with only two further specimens detected on the forest floor recovered from pitfall traps (Richards & Spencer unpub. data). Given the number of specimens collected from the canopy, it is considered likely that the ground-based collections were aberrant.

POPULATION PARAMETERS

While positive records are patchy, contiguous habitat between the known localities suggests there is likely to be a single continuous population with an unknown number of individuals.

RESERVATION STATUS

All but one of the known records for this species occur within the Blue Tier Regional Reserve. The precise location of the original collection is unknown, although it appears to be in the vicinity of the Weldborough Pass Forest Walk (Public Reserve under the *Crown Lands Act 1998*).

CONSERVATION STATUS

The Weldborough forest weevil was listed as rare in 2002 on the Tasmanian *Threatened Species Protection Act 1995*, meeting criterion B: the total population is small and restricted and at risk, specifically criteria B1: the total population consists of fewer than 10,000 mature individuals, and no more than 2,500 mature individuals occur on land that is in an area free from sudden processes capable of causing largely irreversible loss of individuals or habitat; and B2: 90% of mature individuals occur in 15 or fewer subpopulations or locations and no more than 5 of these occur in an area that is free from sudden processes capable of causing largely irreversible loss of individuals or habitat.



Plate 2. Weldborough forest weevil habitat (Image: Spencer & Richards ©)

THREATS, LIMITING FACTORS AND MANAGEMENT ISSUES

Potential threats to the Weldborough forest weevil include activities that may permanently remove or reduce quality of habitat. Such activities include forest clearing for agriculture and plantation establishment, forestry activities, wildfire, climate change and introduction of myrtle wilt.

Habitat disturbance & clearance: Most of the known range of the species occurs within reserves, therefore disturbance from forestry-related activities is unlikely to have a significant impact on the Weldborough forest weevil. The alteration of mature forest to younger and more even-aged forest, and conversion of forest to monoculture plantation or primary production land, remains a potential threat if the species occurs outside of the reserve system. Other forms of habitat disturbance that may threaten the species are myrtle wilt and introduced predators.

Fire: The habitat of the Weldborough forest weevil is subject to infrequent fires. Uncontrolled wildfire, such as those experienced in the early 1900's, has the potential to substantially alter the supporting habitat.

Stochastic risk: The Weldborough forest weevil is known from only 11 sites with an extent of occurrence of 6.1 km, making the species subject to losses from chance events.

The species is flightless, occurring at low population densities and inhabit the same trees over subsequent years, thus are highly susceptible to population loss.

Climate change: A warmer climate and longer periods of drought may deleteriously impact on the forest habitat supporting the Weldborough forest weevil, through effects such as dying of shading overstorey trees and dense understorey and exacerbating the potential risk of the frequency and intensity of fire events, altering the structure of the forest community.

MANAGEMENT STRATEGY

Management objectives

The main objective for the management of the Weldborough forest weevil is to reduce the risk of extinction to the species by protecting the known sites and supporting habitat to ensure maintenance of the population.

What has been done?

Surveys: Some surveys have been undertaken as part of forestry proposals (e.g. Richards & Spencer 2005), while annual targeted surveys were undertaken between 2016–2018 (Richards & Spencer 2017).

Forestry management: The Weldborough forest weevil is included in the *Threatened Fauna Adviser*, a decision-support system used by the forest industry to take account of threatened fauna in wood production forests managed under the Tasmanian *Forest Practices Code* (FPB 2000, 2002, FPA & DPIPWE 2011).

What is needed?

Agencies, groups or individuals may assist with some or all of the following recovery actions. Coordinated efforts may achieve the best and most efficient results.

- To establish the full extent of the species – undertake extension surveys radiating out from the known sites, using targeted search methods followed by systematic surveying of any populations found.

- To improve protection of the species – update population information held in the NRE Tas *Natural Values Atlas* (currently no data held).
- To improve protection of the species – clarify the status of the Crown land title associated with the Weldborough Rainforest Walk site and ensure it remains as a reserve.
- To improve protection of the species – support the Private Land Conservation Program (NRE Tas) with the establishment of conservation covenants for private land supporting known sites (if detected) and potential habitat, and ensure that current priorities for the species are incorporated into the program’s reservation strategies.
- To improve protection of the species – provide information and extension support to relevant Natural Resource Management committees, local councils, government agencies, the local community and development proponents on the locality, significance and management of known sites and potential habitat of the Weldborough forest weevil.

BIBLIOGRAPHY

- CLAC (Crown Land Assessment and Classification Project Team) (2006). *Crown Land Assessment and Classification Project Consultation Report and Recommended Allocations for the Municipality of Break O’Day*. Department of Primary Industries, Water and Environment, Hobart.
- FPA (Forest Practices Authority) and DPIPWE (Department of Primary Industries, Parks, Water and Environment) (2011). Review of Threatened Fauna Adviser: Background Document 2, Review of Information on Species, Draft Decision Pathways and Recommended Actions. Forest Practices Authority, Hobart.
- FPB (Forest Practices Board) (2000). *Forest Practices Code 2000*. Forest Practices Board, Hobart.
- FPB (Forest Practices Board) (2002). *Threatened Fauna Adviser*. Decision Support Software.

Keble-Williams, P.J. (2012) *Canopy Arthropods and Herbivory on the Tasmanian Southern Beeches, Nothofagus cunninghamii and Nothofagus gunnii*. PhD thesis, Department of Geography and Environmental Studies, University of Tasmania.

Richards, K. & Spencer, C. (2005). *A Survey for the Threatened Weldborough Forest Weevil (Enchymus sp. nov.: Curculionidae), on Private Property, North Eastern Tasmania*. Report to Forest Enterprises Australia, Forest Practices Authority, Hobart.

Richards, K. and Spencer, C. P. (2017). The elusive Weldborough forest weevil, *Enchymus* sp. nov. Zimmerman 1991 (Coleoptera: Curculionidae). *The Tasmanian Naturalist*, 139: 23-26

Zimmerman, E.C. (1991). *Australian Weevils. Volume 5*. CSIRO, Melbourne.

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View:

<http://nre.tas.gov.au/conservation/threatened-species/lists-of-threatened-species>

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Permit: A permit is required under the Tasmanian *Threatened Species Protection Act 1995* to knowingly “take” (which includes kill, injure, catch, damage, destroy and collect), keep, trade in or process any specimen of a listed species.