



October 2001

Protecting New Zealand's Invertebrates

The Department of Conservation has just released *The Conservation Requirements of New Zealand's Nationally Threatened Invertebrates*. This document contains information on 280 invertebrate species the Department of Conservation lists as being of conservation priority, and outlines steps to ensure their survival. An additional 540 species are listed that may require conservation management in the future.

Click beetle, *Amychus* sp
Photo: John Marris,
Lincoln University

WHAT ARE INVERTEBRATES AND WHY CONSERVE THEM?



Invertebrates are animals without a backbone. They are a diverse group ranging from spiders and jellyfish through to insects and worms.

Invertebrates are vital components of the ecosystem as they recycle nutrients and maintain soil structure. They are an important food source for many native species including bats, kiwi, robins, and fantails, and include marine species New Zealanders like to eat – crayfish, kina, paua and shellfish. Many insects such as moths and flies are pollinators of plants, and are vital to the plant's continued survival. All form part of a complex web of interactions, and the loss of a species can have a widespread effect on the system in which it lives. Without native invertebrates New Zealand would look very different.

WHY ARE NEW ZEALAND INVERTEBRATES SO SPECIAL?

Due to New Zealand's geographic isolation many of its species have evolved into unique forms. The majority of New Zealand's native invertebrates are found nowhere else.

Like some native birds, many invertebrates became large and flightless (e.g. giant weta, tussock weta and giant weevils). Because the invertebrate fauna evolved along with the rest of New Zealand's flora and fauna, they have a close association and help maintain a healthy balance in the ecosystem. Introduced invertebrate species often disrupt these associations and cannot fill the role of the native invertebrate.



Bluff weta, *Deinacrida elegans*
Permission: Manaaki Whenua
Press, Meads & Notman 1991



Coxella weevil, *Hadramphus spinipennis*
Photo: John Marris, Lincoln University



Department of Conservation
Te Papa Atawhai



WHAT ARE THE MAIN THREATS TO NEW ZEALAND INVERTEBRATES?



Northern pimelea cutworm moth, *Meterana pictula*
Photo: Brian Patrick

The main threats are habitat modification and predation. Introduced plants can displace native plants, reducing the habitat for host-specific invertebrates. Introduced browsers like deer and goats trample habitat, thin the under-canopy, reduce leaf litter, and dry out the environment. The clearance of native bush and scrub for urban development, rural farming, and forestry has resulted in fewer and more fragmented habitats. Roads or pasture can be impassable tracts of hostile ground for specialised invertebrates.

Predation by introduced vertebrate species such as rats, hedgehogs, mice, and possums is a major problem. Poor natural defence systems against these predators combined with human activities means some species are struggling for survival.

HOW WILL THE DOCUMENT BE USED?

Conservation managers will use the document to help set priorities and detail the work that needs to be done for each species. The document will also aid the identification of species. Universities, museums and research institutes will use it to determine research projects. It will assist regional and district councils with resource consents. Schools and the general public can use the document for general interest and as a resource for projects.

Shagnum porina moth, *Heloxycanus patricki*
Photo: Brian Patrick



HOW CAN I HELP?

People can help by considering their attitude to invertebrates. People often kill a spider or insect without thinking. Why? It's about a thousand times smaller than us, and most are harmless. Put unwanted spiders or insects found inside a house outside, rather than kill them.

People wanting to encourage insects in their garden can create areas of logs or dead wood for shelter, or leave leaf litter on the ground. More insects in a garden will also attract more birds.



Poor Knights cave weta, *Gymnoplectron giganteum*
Photo: Mike Aviss

WHERE CAN I GET THE DOCUMENT?

Copies of the document are available from the Department's Science Publishing unit.

DOC Science Publishing
Science & Technical Centre
Department of Conservation
PO Box 10420, Wellington

Phone: (04) 471 3285
VPN: 8285
Fax: (04) 471 3279
Email: science_publications@doc.govt.nz

Or on www.doc.govt.nz

Published by
Department of Conservation
59 Boulcott Street
PO Box 10 420
Wellington, New Zealand
Telephone (04) 471 0726
www.doc.govt.nz

Printed on recycled paper

Border Images, left to right: Pitt Island longhorn beetle *Xylotoles costatus*, Photo John Marris Lincoln University; *Meterana* "Foveaux Strait" caterpillar, Photo Brian Patrick; *Notoreas* "Wellington" moth, Photo Brian Patrick; Carabid beetle *Mecodema rugiceps anomalum*, Permission Landcare Research, Photo Ian Townsend; Bat fly *Mystacinobia zelandica*, Permission Landcare Research, Photo Beverley Holloway; Scarab beetle *Prodontria patricki*, Photo Brian Patrick; Cromwell chafer beetle *Prodontria lewisii*, Photo Brian Patrick.

The Department of Conservation's Mission is: To conserve New Zealand's natural and historic heritage for all to enjoy now and in the future. Ko ta Te Papa Atawhai he whakaute he tiaki i nga taonga koiora me nga taonga tuku ibo hei painga mo te katoa inaianei, mo ake tohu ake.