

# Invertebrate conservation in Northland

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# Abstract

The following report provides recommendations on generic requirements for terrestrial invertebrate conservation in Northland and indicates immediate work required on threatened Northland mollusc species that are currently neglected.

## 1. Inventory and classification

A fundamental requirement for effective conservation management of terrestrial invertebrates in Northland is the compilation of a list of threatened and potentially threatened taxa, and the establishment of a computer database recording the location and status of populations of those taxa. The inventory should incorporate:

- (a) existing recognised threatened taxa;
- (b) Northland-Auckland endemics;
- (c) geographically-rare taxa (i.e. that are only known from a few sites); and
- (c) medium-large bodied species that are known to be preyed on by introduced vertebrates (e.g. among molluscs that includes species in Bulimulidae, Rhytididae, Athoracophoridae).

An initial species inventory and distribution information could be compiled from examination of published and unpublished literature, museum collections and advice from specialists. Surveys would be required to establish the current status of populations of some taxa. Ongoing Department of Conservation generalist fauna surveys would also contribute information to such an invertebrate database.

Invertebrate taxa included in the database listing should have their conservation status formally classified in publication using IUCN and/or Molloy & Davis (1992) criteria. Key taxa and sites for invertebrate conservation could then be identified and ranked according to relative importance/level of threat and management requirements. Further, information from the invertebrate database could also be incorporated into SSBI/SNA (Sites of Special Biological Interest/Significant Natural Area) site classifications for assessment of general conservation values of sites.

Although a considerable amount of information already exists on the distribution of some invertebrate taxa in Northland, there is very little knowledge of geographic and habitat-related variation in community composition and species diversity of invertebrate faunas. Further, the high rate of discovery of new taxa in Northland (e.g. > 10 landsnails over the last few years) indicates

that there is probably a large number of endemic invertebrate taxa still to be found. Local and regional surveys of invertebrate community composition are required to augment existing species distribution information, document ecological patterns, identify habitats that have highly diverse or hyperdiverse invertebrate communities (*sensu* Solem et al. 1981; G Barker & P Mayhill unpubl. data) and that contain locally endemic, rare and threatened species. Accordingly, the Department of Conservation should itself undertake and also encourage external specialists to carry out invertebrate faunal surveys with the intention that information gained be incorporated into SSBI and SNA databases and so contribute to assessment of ecological values of sites. Suggested priority areas for such surveys include those with rare or threatened habitats, proposed mainland island habitats, and geographic areas known or inferred to contain locally endemic, rare or threatened taxa.

## 2. Neglected threatened molluscs

An invertebrate database as outlined above would obviously provide a basis for determining survey, monitoring and management priorities for key taxa and sites in Northland. However, in the interim, the following threatened mollusc taxa require assessment of management options.

### 2.1 *AMBORHYTIDA TARANGENSIS* (POWELL)

This species is a relict endemic on Hen Island, having become extinct in the Chickens group within the last 200 years. The extant Hen Island population is known to be heavily preyed on by kiore (*Rattus exulans*), and predation by kiore is implicated as a cause of extinction of the species in the Chickens group (Brook in prep.). The distribution, abundance and population structure of *A. tarangensis* on Hen Island needs to be determined, along with quantification of the impact of kiore and other predators, in order to provide a basis for determining management options for the snail taxon.

### 2.2 *PLACOSTYLUS HONGII* (LESSON)

The distribution and status of this species is reviewed in Brook & McArdle (in prep.). That report suggests that, until the genetic status of the various populations is determined, appropriate predator control should be undertaken at all mainland and inshore island sites where the species is still extant. As some sites are on privately owned land (i.e. Orokawa, Tauranga Kawau) advocacy and consultation with landowners will be necessary if that is to be achieved. For sites where predator control is carried out, monitoring will be necessary to determine the effectiveness of control.

### 2.3 *SUCCINEA ARCHEYI* POWELL

This species is restricted to areas of sandfield habitat on a few coastal dunefields in northern and eastern Northland and Coromandel Peninsula. A recovery plan needs to be compiled from existing information on the distribution and status of the various populations in order to determine the overall management requirements of the species. In the interim, private landowners of sites of populations at Horahora, Whananaki, and probably also Ngunguru and Tom Bowling Bay should be approached to discuss possible protection measures for those populations (i.e. the Horahora population is threatened by habitat degradation from stock browse, the Whananaki population is threatened by establishment of a pine plantation, and the other two populations are affected by stock, weeds, etc.).

### 2.4 THREE KINGS ISLANDS SPECIES

The status of endemic snail taxa on Three Kings Islands needs to be reviewed from existing field and historical data in respect of habitat distribution and floral succession, and management options identified for threatened species and key sites. The status of *Rhytidarex buddlei* Powell on Southwest Island is of particular concern, and possible options for direct management intervention need to be identified and discussed.

## 3. Monitoring effects of habitat management

In addition to monitoring the effectiveness of management regimes for particular threatened species (above), it would also be useful to monitor changes in abundance of invertebrate indicator taxa and species assemblages preceding and following implementation of mainland island pest control regimes and island pest eradication programmes, in order to assess the influence of such habitat management on invertebrate populations. Ideally, monitoring programmes should be established well in advance of habitat management to provide baseline data on at least seasonal, if not inter-annual, variation in species abundance and community composition. Particular care should be taken to ensure that control areas for monitoring programmes are representative of managed areas in terms of habitat types and invertebrate faunas.

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