

Chapter 5

An investigation of the land snails and slugs of Nakorotubu Range, Viti Levu, Fiji Islands.

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SUMMARY

Twenty-two different species of terrestrial land snails and slugs were identified during the survey period. Eleven of these species are endemic to Fiji and another two species are either endemic or native. It is likely that at least some of the endemic species found during this survey are threatened and should be listed on the IUCN Red List as in need of some level of conservation action since closely related taxa from the same genera (e.g. *Placostylus*) in other Pacific Island areas are listed. Seven of the species found are introduced and two species are of unknown status. The introductions include *Parmarion martensi* Simroth 1893 which has well documented human health risks in overseas countries. Based on the total number of terrestrial gastropod species found in the Fiji archipelago a higher number of land snail species might be expected.

INTRODUCTION

The diversity of Fiji's terrestrial, gastropod snails is known to be very high in respect to land area, with 160 endemic and 49 native species recorded (Barker 2005). Unfortunately this highly diverse and unique fauna is not well documented, particularly for identification purposes, which makes calculation of biodiversity loss estimates very difficult (Brodie 2009).

Despite being of global significance, terrestrial snails in most Pacific Islands countries like Fiji are known to be under serious threat (Lydeard et al. 2004; Cowie 2000) with native and endemic fauna affected by deteriorating habitat conditions and rising invasive species numbers (Cowie 2004).

Eighteen introduced terrestrial-gastropod species are recorded as present in Fiji (Brodie & Barker, in review) however to date these do not include two of the world's worst high-risk invasive land snails, the giant African snail *Lissachatina fulica* (Bowdich 1822) and the rosy wolf snail *Euglandia rosea* (Férussac, 1821). These two species are already a significant problem; for biodiversity loss, agricultural production and economic trade opportunities, in neighboring Pacific Island areas (Cowie 2001a, SPC/LRD pers. comm.) and it is a great credit to the Fiji government quarantine authorities that Fiji is so far free of these destructive high-risk alien snails.

It is vital to know what baseline biodiversity is present in our ecosystems in order to make informed decisions about future resource management. We also need to learn from what has occurred in other regional island areas (e.g. Samoa, New Caledonia, French Polynesia and Hawaii) as the risk of extinction of our unique Fijian endemic snail fauna, from habitat loss and invasive species, is extremely high.

Land snails and slugs are known collectively as “sici ni vanua” by Fijians. Surprisingly no