Stony Head Bush Blitz

Gastropoda (terrestrial)

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Nomenclature and taxonomy used in this report is consistent with:

The Australian Faunal Directory (AFD)

http://www.environment.gov.au/biodiversity/abrs/online-resources/fauna/afd/home

Contents

List of contributors

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Abstract

Fifteen native and six introduced land snail species were recorded from the previously unsurveyed Stony Head Artillery Range. Although the overall diversity of native snails exceeded pre-survey expectations, many species that appeared capable of occurring in the forest types present were not recorded. This may indicate that the snail fauna is responding to climatic, historic or other factors not captured by vegetation types.

One previously unrecognised (but previously collected) species in the genus *Tasmathera* was recognised as a putative new species as a direct result of the survey. Other highlights included very large range extensions for the coastal snails *Omegapilla australis* and *Tornatellinops jacksonensis*, the latter of which was recorded from the Tasmanian mainland for the first time. A significant range extension was also recorded for *Tasmaphena ruga*, which has not previously been correctly recorded from the northern Tasmanian coast but was found to be fairly common on the property.

1. Introduction

Prior to this survey, Stony Head Artillery Range had never been sampled for land snails. No documented records of land snails, either native or introduced, could be found.

It was expected that at least some native land snails would be recorded, because four species are ubiquitous on the northern Tasmanian coast and because the inland dry and wet forest areas were likely to have at least some other species. However, as a similar TMAG survey of the Musselroe wind farm area had recorded only seven native species, it was possible the diversity at Stony Head would also be low. A pre-survey view was that 10-12 native species would be a good result. Tasmanian dry forests tend to have lower snail diversity than wet forests and the area of wet forest available for surveying appeared limited. However it turned out that there was more wet forest, and in better condition, than had been expected.

2. Methods

2.1 Site selection

Sites were selected in consultation with the other members of the TMAG invertebrate team. Many matched the sites nominated by the Tasmanian Herbarium or TMAG teams before the project. Overall, the sites searched were a roughly even mix of coastal/dune, dry forest, wet forest and intermediate forest sites.

2.2 Survey techniques

Survey methods for snails at each site consisted of hand collecting with the main aim of surveying being to record as many species as possible, firstly for the area as a whole and secondly from each site.

Surveying at each site was free-ranging over a small area (typically 50 m or so, in cases up to 100 m) around a central point. Search times per site varied from passing searches to up to around 120 minutes, depending on the interest value of the site and logistics. Opportunistic collecting by other members of the party also produced several extra specimens.

A sandwich bag full of leaf litter was taken at one site and sorted.

2.2.1 Methods used at standard survey sites

Areas close to both standard survey sites were surveyed by hand collection (searching litter, logs, bark and other available microhabitats) for two hours by the author. Conditions in the leadup to the survey had been very dry, which may have affected diversity at SSS1.

2.3 Identifying the collections

All specimens were identified by the author who is the sole living authority on the Tasmanian fauna. The vast majority of specimens were identified either in the field or at base camp, with all identifications checked by microscope on return and compared against the author's reference collection where necessary. Four specimens of *Lehmannia nyctelia* were partly dissected to confirm identification.

3. Results and Discussion

Appendix 1 lists all land snails recorded during the Bush Blitz. Collections made during this Bush Blitz will result in approximately 373 specimens being added to public collections and 117 records added to publicly accessible databases.

3.1 Un-named or not formalised taxa

Table 1. Putatively un-named or not formalised taxa	
Taxon	**Comment**
Magilaoma sp. “Tasmania”	Common coastal species, widespread around the Tasmanian coast.

3.2 Putative new species (new to science)

One putatively new species was recognised as a result of the collections on this trip – it had been previously collected but not previously recognised as apparently distinct.

Table 2. Putative new species (new to science)	
Species	**Comment**
Tasmathera sp. “Murphys Road”	Previously collected from Murphys Road and Youngs Road (both near Mount Direction, close to the study area), but not suspected to be a putative new species until more material was collected on this survey. Differs from other (mostly undescribed) *Tasmathera* species recorded nearby by having a much more globular shell with a raised rather than sunken spire, and a small but open umbilicus.

3.3 Exotic and pest species

Six species of exotic snail (including four slugs) were recorded. The presence of several introduced species is to be expected given the history of disturbance of parts of the property. No significant infestations were observed, though denser populations of all these species are likely in more disturbed areas of the property. No control actions are recommended.

Table 3. Exotic and pest species recorded

Exotic/pest species	Location sighted/observed	Indication of abundance	Comments
Candidula intersecta	Maitland Bay, Black Rock Point near dam	Locally common	Unwarranted Quarantine Pest in Tasmania, but erroneously so because it was incorrectly thought to be absent from the state and is actually widespread. Status may be reviewed.
Lehmannia nyctelia	Widespread on property	Common at Quarry Road; in small numbers elsewhere.	
Deroceras panormitanum	Paddock on North-South Road	One collected	Correct name for Australian populations is *D. invadens* – AFD is out of date.
Arion intermedius	Ryans East Trail	One collected	
Deroceras reticulatum	Ryans East Trail	One collected	
Oxychilus alliarius	Dunes near Seaview Road	Locally common	

3.4 Threatened species

No listed threatened species were recorded and none were likely to occur.

Table 4. Threatened species

Species	Listing status and level (EBPC, State/Territory)	Location sighted/observed	Indication of abundance

3.5 Range extensions

Minor extensions for common widespread species have not been included. For species with multiple records, the site of the furthest extension of range is given under “Location sighted/observed”.

Table 5. Range extensions or significant infill in distribution records for species			
Species	**Location sighted/observed**	**Distance from nearest known record (km)**	**Comments**
Tornatellinops jacksonensis	Maitland Bay -40.9841 147.0131 (Sole site recorded)	105 (extension)	First record from Tasmanian mainland. 5th Tasmanian record.
Omegapilla australis	Maitland Bay -40.9864 147.0062 (1 of 2 sites recorded)	105 (extension)	First record from northern Tasmanian coast. Locally common on eastern Tasmanian coast and Furneaux and Kent Group islands.
Tasmathera sp "Murphys Road"	North-South Rd/Santa Barbara junction -41.0381 147.0077 (1 of 5 sites recorded)	17 (extension)	Two previous records from Mt Direction area. All records in this survey were from the southern end of the property.
Tasmaphena ruga	Ryans Hill -41.0186 147.0289 (1 of 8 sites recorded)	25 (extension)	First record of species along Tasmanian north coast. Species was quite common in this survey but numerous previous attempts to find it on the northern Tasmanian coast have failed.

3.6 Genetic information

No specific sampling of genetic material was undertaken but live-collected material has been preserved in ethanol (mostly 75%, in one case 100%).

4. Information on species lists

The identification of *Gratilaoma halli* is tentative. The only record was a single dead specimen in very poor condition retrieved from a litter sample. However irrespective of the identity of the specimen it is a species not otherwise recorded on the survey.

A species of *Deroceras* present has been given as *D. panormitanum* for consistency with the current AFD listing but its actual identity is *D. invadens*. The AFD have been emailed regarding the outdated listing.

The species *Tornatellinops jacksonensis* is treated as native. Pre-European-settlement dispersal by Indigenous peoples is common in the family Achatinellidae to which *Tornatellinops jacksonensis* belongs and it is possible the species arrived in Tasmania by this method.

5. Information for land managers

The property has a fairly high diversity of coastal snails. It has a modest diversity of dry and wet forest snails, including good populations of one localised undescribed species (*Tasmathera* sp. “Murphys Road”) for which were only two previous records. Maitland Bay is a significant coastal snail site as two species are present there that are not otherwise recorded from the north coast of Tasmania. No changes to current management practices are recommended.

6. Other significant findings

A number of species that might have been expected from these sorts of habitats (especially the wet forest around Ryans Hill) were not recorded. Surprising absences included the charopid genus *Bonhamaropa*, the charopid *Thryasona diemenensis*, forest-dwelling species of the charopid genus *Scelidoropa*, various dry and wet forest-dwelling members of the family Punctidae, and the rhytidid genus *Prolesophanta*. Two species not recorded in the survey (the punctid *Trocholaoma parvissima* and the rhytidid *Prolesophanta dyeri*) have previously been recorded within 5 km of the survey area. It is difficult to say why there were so many absences from seemingly suitable forest types, with possible factors including environmental prehistory, recent fire history, soil quality, low average rainfall and (perhaps for punctids) dry conditions in the leadup to the survey.

7. Conclusions

The diversity found on the survey (15 native species) exceeded initial expectations, but it is also the case that the habitats surveyed looked capable of supporting many more species than were actually found. It may be that the “wet forest” areas of Stony Head are not so wet from a land snail’s perspective.

Appendix 1. List of Gastropoda recorded during the Stony Head Bush Blitz						
Family	**Species**	**Common name**	**Putative new species**	**Threatened (EPBC Act)**	**Threatened (State Act)**	**Exotic / pest**
Achatinellidae	*Tornatellinops jacksonensis*		No	No	No	No
Agriolimacidae	*Deroceras panormitanum*		No	No	No	Yes
Agriolimacidae	*Deroceras reticulatum*	Grey field slug	No	No	No	Yes
Arionidae	*Arion intermedius*	Hedgehog slug	No	No	No	Yes
Caryodidae	*Caryodes dufresnii*	Walnut snail	No	No	No	No
Charopidae	*Tasmathera limula*		No	No	No	No
Charopidae	*Tasmathera* sp. "Murphys Road"		Yes	No	No	No
Charopidae	*Scelidoropa officeri*		No	No	No	No
Charopidae	*Stenacapha hamiltoni*		No	No	No	No
Cystopeltidae	*Cystopelta petterdi*		No	No	No	No
Helicarionidae	*Helicarion cuvieri*		No	No	No	No
Hygromiidae	*Candidula intersecta*	Wrinkled snail	No	No	No	Yes
Limacidae	*Lehmannia nyctelia*	Striped field slug	No	No	No	Yes
Punctidae	*Gratilaoma halli*		No	No	No	No
Punctidae	*Paralaoma hobarti*		No	No	No	No
Punctidae	*Magilaoma* sp. "Tasmania"		No	No	No	No
Punctidae	*Laomavix collisi*		No	No	No	No
Pupillidae	*Omegapilla australis*		No	No	No	No
Rhytididae	*Tasmaphena ruga*		No	No	No	No
Rhytididae	*Victaphanta lampra*		No	No	No	No
Zonitidae	*Oxychilus alliarius*	Garlic snail	No	No	No	Yes