

Issues regarding the Matters of National Environmental Significance (MNES) pertaining to *Thersites mitchellae* (Cox, 1864) (Mitchell's Rainforest Snail) at 771 Cudgen Rd, Cudgen, NSW, site for the proposed Tweed Valley Hospital



Prepared for TSA Management on behalf of Health Infrastructure

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Introduction

The author was engaged by TSA Management to address a number of issues raised in regards to the preparation of MNES report relating to the listed land snail *Thersites mitchellae* (Mitchell's Rainforest Snail) at 771 Cudgen Rd, Cudgen, N.S.W, the proposed site for the construction of Tweed Valley Hospital (the subject site).

The author has visited the subject site twice, 19-20 December, 2018 and 20-22 May, 2019. Targeted searches were conducted both during the day and the evening. In December, 2018 the site was dry, temperatures were warm and humidity reasonably high. In May, 2019 it rained the day before the site visit but day and night time temperatures and humidity were lower.

Criteria to be addressed

The following issues have been raised by the Commonwealth in regards to a population of *T. mitchellae* recorded on the adjoining land along the northern boundary of the subject site.

1. Lead to long term decrease in population

The development in its current form will not lead to a long term decrease of a population of *T. mitchellae* as to date the species has not been found within the boundaries of the subject site. However, there is a population present in the adjoining land along the northern boundary of the subject site, and the development as proposed will not lead to a long term decrease to the population of *T. mitchellae* present in the adjoining land. The proposed development has a conservation zone along the northern boundary which will be improved by removing non-native vegetation and improving the drainage in the area, which will increase the potential available habitat for the species.

2. Reduce area of impact

The proposed development in its current form will result in an increase of potential habitat for *T. mitchellae* not a reduction in current known habitat.

3. Fragment existing population

The proposed development will not lead to the fragmentation of a known population of *T. mitchellae*. However, it will increase the potential available habitat in the area.

4. Adversely affect habitat

The proposed development will not adversely affect the known habitat of *T. mitchellae*. The current proposed mitigation measures for the development will increase and improve the available habitat present, with the retention of a conservation zone along the northern boundary of the subject site.

5. Disrupts breeding cycle of population

The proposed development will not disrupt the breeding cycle of the population of *T. mitchellae* located in the adjoining land along the northern boundary of the subject site.

6. Modify, reduce habitat

The proposed development will enhance not reduce the available habitat for *T. mitchellae* by the retention of a conservation zone along the northern boundary of the subject site. There is a known population of *T. mitchellae* present in the land directly adjoining the northern boundary of the subject site. Therefore it is anticipated that individuals of *T. mitchellae* will utilise any new habitat as it becomes available overtime.

7. Result in invasive species endangering threatened species

The Black Rat (*Rattus rattus*) is present on the subject site including the proposed conservation zone and the adjoining lands and is known predator of snails. There is potential that once the hospital is built there could be an increase in the number of rats present within the area and that this could result in additional predation pressure on the population of *T. mitchellae* in the adjoining land to the north and potentially impede the immigration of individuals into the conservation zone as the available habitat is improved by the removal of non-native plants and the improvements to drainage.

8. Introduction of disease

It is considered highly unlikely that the proposed development will lead to the introduction of diseases or pathogens deleterious to *T. mitchellae*. However, relatively little is known about the biology of *T. mitchellae* but particularly what types of pathogens and parasites attack *T. mitchellae* or if any of these may be present now or could be introduced in the future.

9. Interfere with recovery of species.

The proposed development in its current form will not interfere with the recovery of *T. mitchellae*. However, the retention of the conservation zone and the proposed improvements to the ecological values, will contribute to the recovery of *T. mitchellae*.