



Cumberland Plain Large Land Snail

Meridolum corneovirens (Pfeiffer, 1851)

The following information is provided to assist authors of Species Impact Statements, development and activity proponents and determining and consent authorities, who are required to prepare or review assessments of likely impacts on threatened species pursuant to the provisions of the *Environmental Planning and Assessment Act 1979*. These guidelines should be read in conjunction with the NPWS *Information Circular No. 2: Threatened Species Assessment under the EP&A Act: The '8 Part Test' of Significance* (November 1996).

Survey

Current records of *M. corneovirens* are restricted to the Cumberland Plain and Castlereagh Woodlands of Western Sydney and along the fringes of River Flat Forest, especially where it meets Cumberland Plain Woodland.

M. corneovirens can be found under logs and other debris, amongst leaf and bark accumulations around bases of trees and sometimes under grass clumps. Where possible it will burrow into loose soil. It can also be found sheltering under virtually any form of human made ground cover, including rubbish, building materials, old car parts etc.

Areas of Cumberland Plain and Castlereagh Woodlands and River Flat Forest fringing Cumberland Plain Woodland are potential *M. corneovirens* habitat. The species will persist in degraded environments provided that ground cover of logs or rubbish is available.

M. corneovirens can be surveyed year round and it is not necessary to wait until after wet weather. The minimum time required will depend on the size and amount of potential habitat present within the site being assessed.

The presence of empty shells should be treated as indicating the presence of living individuals and requires further investigation.

Life cycle of the species

Very little is currently known about the biology and life history of *M. corneovirens*. It is hermaphroditic and lays clutches of around 20-25 small round white eggs. Eggs are laid in moist and dark areas such as under logs. Usually they take about 2-3 weeks to hatch. Recent observations suggest that *M. corneovirens* probably reproduces year round, where conditions are suitable.

M. corneovirens is a fungal feeder and is generally active at night. Nothing is currently known about rates of fecundity, length of life span, dispersal patterns and over what distances individuals can move.

Threatening processes

High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition" is a key threatening process listed under the TSC Act. This process is relevant to this species.

Other processes generally recognised as threats include habitat clearance and modification particularly weed invasion, removal and reduction of ground cover.

Viable local population

It is currently not known what number of individuals constitutes a viable population. Small populations are considered viable unless proven otherwise.

A significant area of habitat

Assessment of a site should consider:

- the amount of ground cover present and the number of living individuals observed
- the quality of the habitat present
- whether the site is at the edge of the species or an extension to the species current known range
- the long term security of the site.

Isolation & fragmentation

M. corneovirens is morphologically diverse both within and between populations. No genetic studies have been conducted to gain an insight into the overall population structure or the levels of gene flow among populations.

However, as the habitat of *M. corneovirens* is further fragmented and populations become increasingly more isolated, the overall genetic and morphological diversity of *M. corneovirens* will be detrimentally affected.

Within the Agnes Banks and Castlereagh Nature Reserves populations occur which are morphologically distinct and may, prove to be a different species.

Regional distribution

The known distribution of *M. corneovirens* is restricted to the Cumberland Plain region of Western Sydney in the Sydney Basin Bioregion. Populations have been recorded in (but are not limited to) the following local government areas: Baulkham Hills, Blacktown, Camden, Campbelltown, Fairfield, Hawkesbury, Holroyd, Liverpool, Penrith, and Wollondilly.

For further information contact

Threatened Species Unit, Central Directorate, NSW NPWS PO Box 1967 Phone (02) 9585 6678 or visit our website at www.npws.nsw.gov.au

References

Stephanie Clark (personal observations, 1998-1999, as part of a PhD project on the *Meridolum* of the Sydney Region).

Rudman, W.B. 1999. Threatened and Endangered Landsnail species - *Meridolum corneovirens*. <http://www.austmus.gov.au/science/division/invert/mal/endangered/meridolum.htm>

Limit of known distribution

M. corneovirens occurs within the Cumberland Plain region of Western Sydney, bounded by Cattai (to the north), Picton (to the south), Prospect Reservoir (to the east) and Yarramundi (to the west).

Representation in conservation reserves

It has been recorded from Scheyville National Park, Agnes Banks Nature Reserve, Castlereagh Nature Reserve, Windsor Downs Nature Reserve and the northern tip of Gulguer Nature Reserve (Bents Basin).

Given the distribution and morphological diversity apparent within *M. corneovirens*, the current reserve system does not represent an adequate coverage of the species morphological and genetic diversity particularly in the southern and south-eastern parts of its' range. However, a number of sites occur on lands owned by public authorities including Prospect Reservoir, the Holsworthy and Orchard Hills defence facilities and Noorumba (Campbelltown LGA) and Nurragingy (Blacktown LGA) Reserves, which, under appropriate management conditions, could provide a suitable level of protection.

Critical habitat

There is currently no critical habitat listed for *M. corneovirens*.

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