

# Expediting biological control for snails in cropping areas of the Murray Plains

## Background

Snail problems in the Murray Plains region are common and there are four introduced species of round and conical snails known as pests.

It is vital to control these snail populations throughout the year to prevent crop damage and grain contamination at harvest.

This project has built on the work undertaken by SARDI Entomology largely on the Yorke Peninsula. It has assisted in identifying suitable sites for trial work in the Murray Plains region focusing on the use of biological controls for snail management.

Additionally, land managers have been up skilled in best practice snail management control techniques.



A parasitic fly attacking a conical snail.

## The method

Using mapping tools and local knowledge the project team were able to identify release sites for the parasitic fly for conical snail control. Researchers had recommended that these areas needed to be undisturbed revegetation areas near the crop. The on ground works spatial geo-database was used to narrow down the search and was also able to identify soil types that attract snails.

Once sites were identified field data was collected using SARDI methodology (0.1m<sup>2</sup> quadrat counts) to measure the number and species of snails.

The field data was provided to SARDI to be included for consideration as future release sites for snail biological controls.

A workshop with landholders was held to showcase best practise snail management and communicate current research goals and objectives.

An educational resource was also developed to assist landholders to measure snail density in the paddock.

## The results

Interrogating the on-ground works geo-database with the suitable search parameters uncovered 17 sites, covering 1419ha that have potential for future trial work.

Five landholders have participated in the project with six monitoring sites for snail density assessment.

A key NRM message about biological controls is that linkages exist between good soil health and encouraging naturally existing biological controls, such as beetles.

The main barrier to current adoption of biological controls for snails is the lack of the commercially available introduced species. Seasonal conditions also need to favour their release and this can be variable.

There were 32 land managers that attended the snail management workshop. The following topics were covered in detailed:

- Identification of introduced species and appropriate baiting products.
- The preferred diet of snails and information on foraging behaviour.
- The role of healthy native vegetation and naturally occurring biological controls (insects and nematodes).

To inform the public of the project two ferry signs were situated at Mannum and a poster at the information bay, which provided links to further information.

## Recommendations

Further research questions have been identified by the project and will be used to structure on going research in the region, with a PhD student.

The next stage of the project will aim to:

- Find a correlation between the condition of native vegetation and the density of introduced snails.
- Understand the influence farm practises, such as chemical usage, have on nematode parasitism of snails compared to native vegetation.
- Develop a database of public generated snail monitoring information.
- Maintain and grow links with other stakeholders and organisations.





Snails in native vegetation.

## Conclusion

This project raised awareness and interest in the use of biological controls for snails in the Murray Plains region.

Biological control programs are long-term projects that require solid linkages between stakeholders over a long period of time. For maximum benefit they need to include industry, consultants, land holders the community, natural resources and research staff.

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