

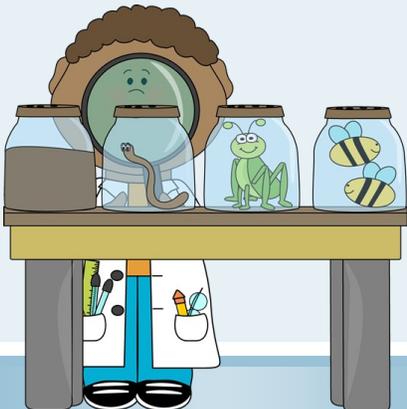
Get Involved!

We need your help to identify which lakes within the Maritimes have Chinese mystery snail populations.

If you find a Chinese mystery snail, please:

- Record the location where you found the snail (preferably with GPS coordinates in decimal degrees to 5 decimal places), the name of the waterbody, and take 3 pictures of the snail
- Email your information to Mystery.Snail.Reports@gmail.com or download our app and post your

Citizen Science



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Thank you to Fisheries and Oceans Canada and Saint Mary's University Faculty of Graduate Studies and Research for funding the design and implementation of these brochures!

Merci à Pêches et Océans Canada et la Faculté d'Études Supérieures et de Recherche de l'université de Saint Mary pour l'argent qui contribuait à la création de ces brochures!

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The Chinese Mystery Snail Project



*An Aquatic Invasive Species Present
in the Maritimes*

Photograph by: Royal Ontario Museum



What is the Chinese Mystery Snail Project?

The Chinese mystery Snail Project is a graduate thesis project on Chinese mystery snails. The aim of the project is to determine where Chinese mystery snails (CMS) are located throughout the Maritimes through habitat suitability modeling, lake surveys, and reports collected from helpful citizens.

Habitat suitability modeling is the process of taking habitat characteristics (e.g. maximum lake depth) of waterbodies with known CMS presence and applying those predictive characteristics to other waterbodies to see where CMS are likely to occur.

However, no computer model can perfectly predict where CMS will be. Therefore, we need the public's help to find where CMS are. Help us monitor waterbodies in Atlantic Canada so that we can better manage the spread of this invasive species!

What are Chinese Mystery snails?

Chinese mystery snails (CMS), *Cipangopaludina chinensis*, are a mollusc species that is native to Eastern Asia. They first came to North America in the 1890s via the Asian food market and since have spread across the United States of America and Southern Canada. In Canada, CMS are mostly concentrated in the South-Eastern portion of the country.

CMS can tolerate a range of water temperatures (0-45°C) and can survive up to 4 weeks of air exposure (i.e. remaining outside of water). Females give birth to live, crawling, fully-developed young and can have over 100 offspring per brood. The life expectancy is 5 years for females and 3 years for males.

These snails are likely spreading throughout North America accidentally via boater movements and transfer between lakes by recreational fishermen. CMS may be introduced purposefully to waterbodies by aquarium releases and individuals wishing to establish a fresh food source.

Why are Chinese Mystery snails Invasive?

Chinese mystery snails (CMS) are not easily eradicated, traditional management techniques such as molluscicides are ineffective because CMS are very resistant to heat and chemicals.

CMS are much larger than native snail species and, due to their trap door feature, are more resistant to predation than native species. CMS can out-compete native snail species for food, habitat space, and are more resistant to predation. Additionally, CMS reproduce very quickly. It is possible for these snails to over populate invaded territory, forcing native species to relocate. At high population levels, CMS can change their feeding mechanisms to include filter feeding (in addition to grazing) which leads to competition with other filter feeding species (e.g. mussels). CMS have been shown to be able to alter the periphyton community and nitrogen and phosphorous water concentrations.

Also, CMS have been known to clog drain pipes and screens on intake pipes which negatively affects irrigation systems.

CMS have a high probability of spreading to connected waterbodies and, once established, are difficult to get rid of.



Photograph by: Dr. Linda Campbell