

# Non-Genetic *Littoraria* Fitness: How Size, Environment, and Health Affect Survivorship of Predator Interactions

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## Introduction

*Littoraria irrorata* is a type of salt marsh snail that lives on the United States's Atlantic coast. A common and seemingly vulnerable prey animal, some boast scars from predator escapes. These scars should be correlated with other visible factors, which demonstrate their fitness to escape.

## Materials and methods

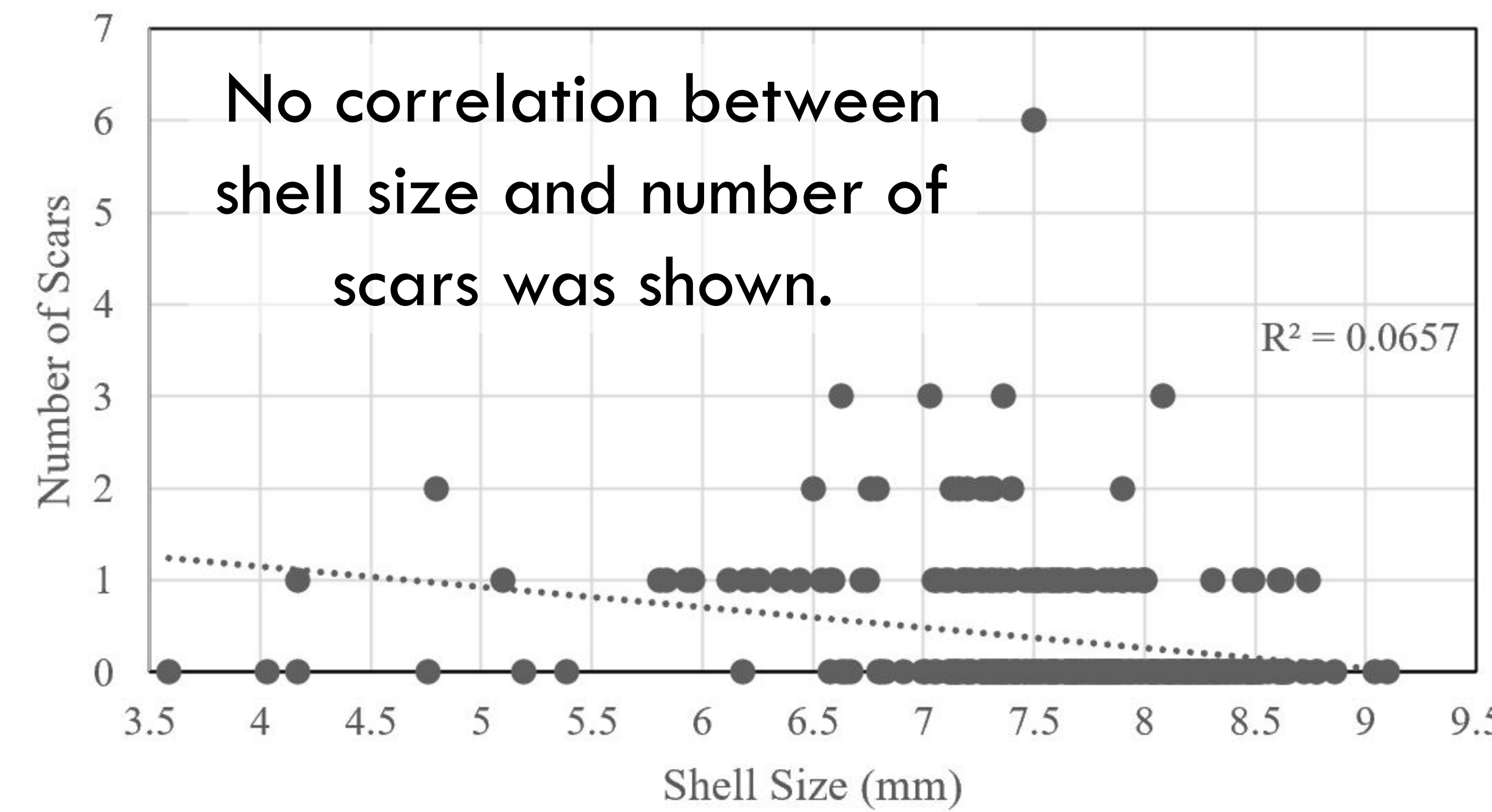
About 300 *Littoraria* were collected from various sites around Beaufort, NC, measured, and checked for scars. The characteristics of the snails and their sites were then compared to the number and prevalence of scars among the samples using linear regressions.

## Results

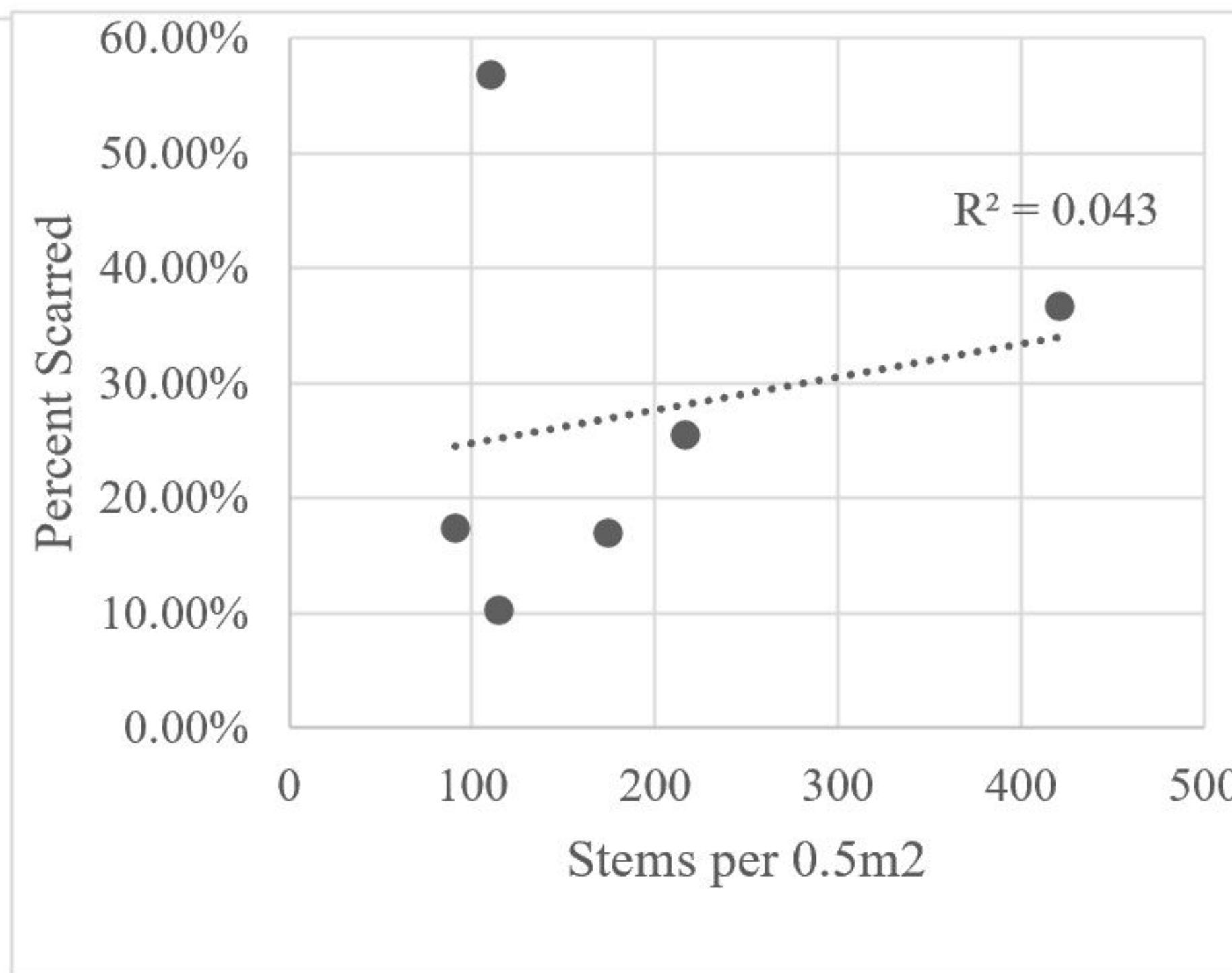
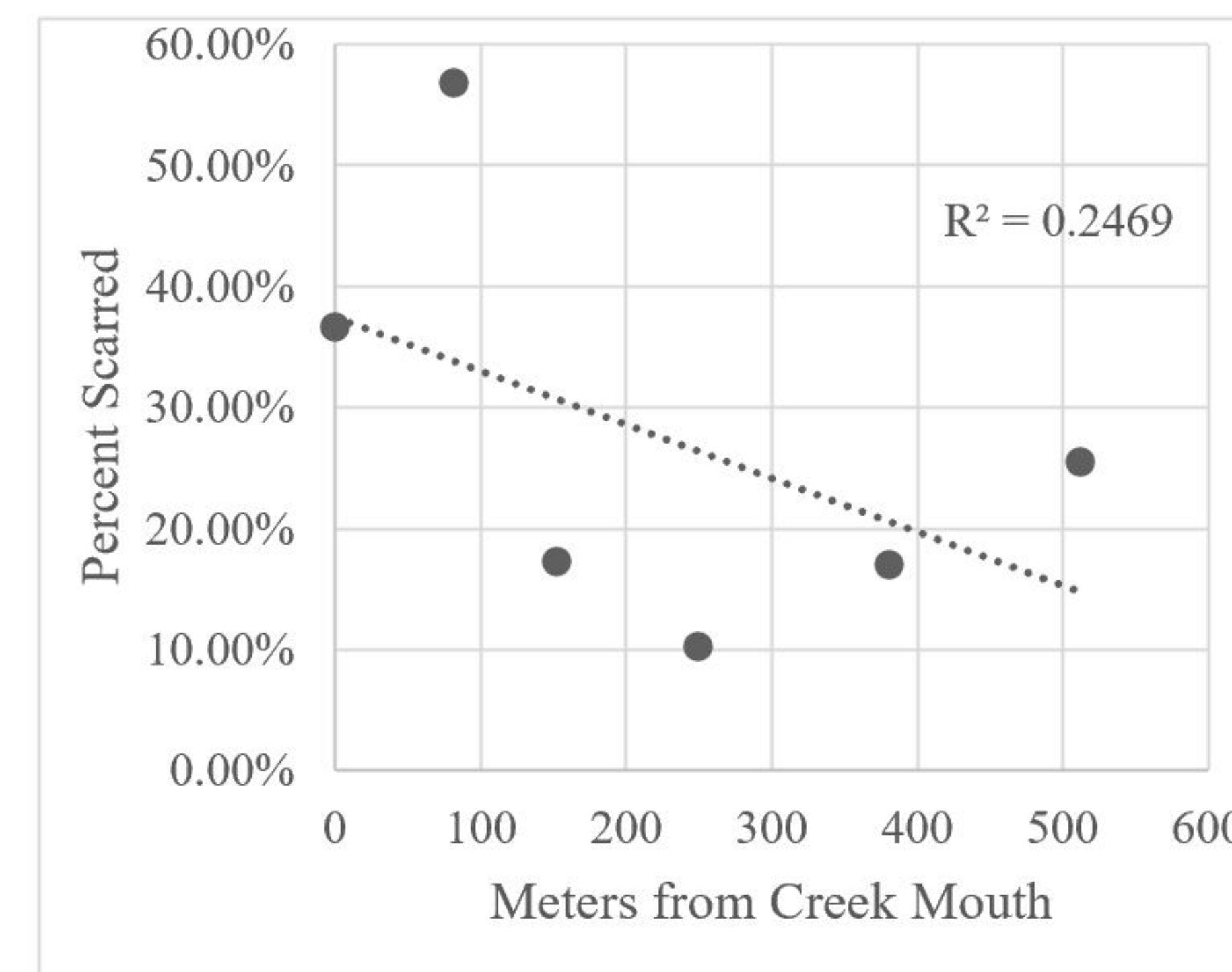
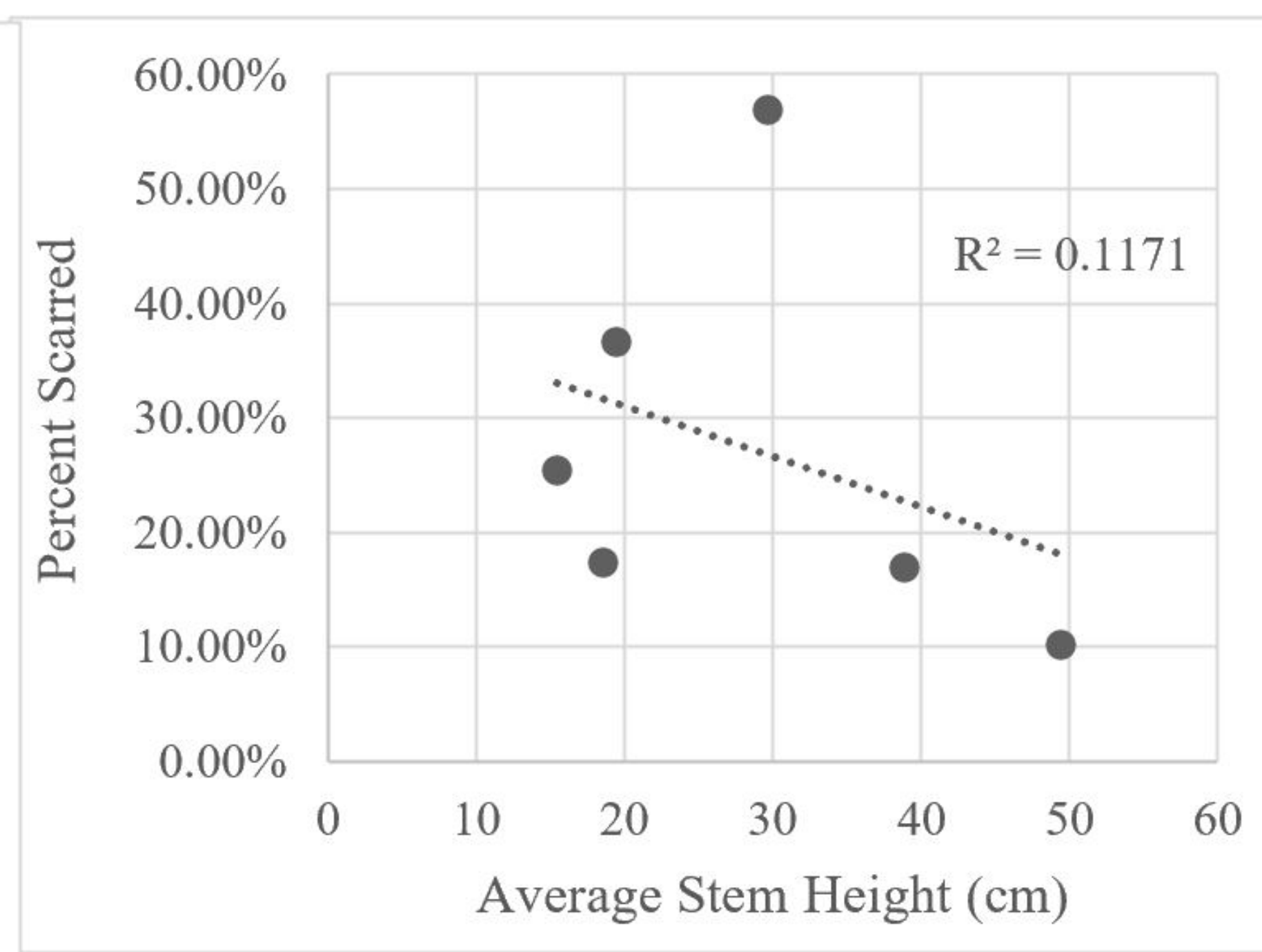
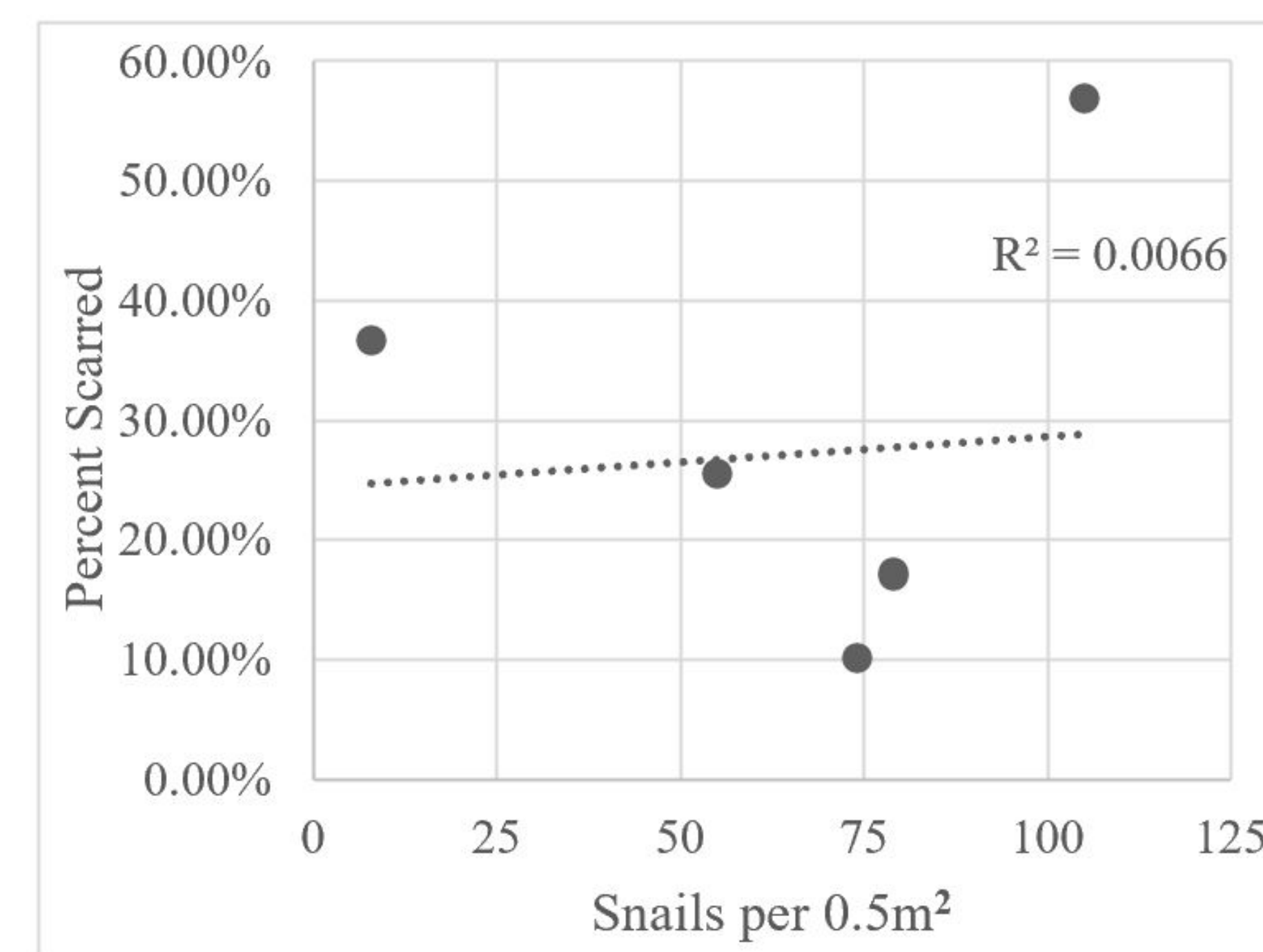
This shell shows significant scarring.



This shell does not show scarring.



Likewise, no correlation between scarring rates and the characteristics of the collection sites appeared.



## Conclusions

Existing literature on *Littoraria* suggests that correlations between size/ecosystem features should correlate with different predation rates, so this suggests that there is something different about this sample.

In order to determine what exactly this difference entails, similar studies should be conducted involving more sites from the Beaufort, NC salt marshes, and perhaps others along the Atlantic coast. This will help assess the unique responses of different salt marsh ecosystems to environmental shifts.

## Literature cited

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- Schindler, D. E., Johnson, B. M., MacKay, N. A., Bouwes, N., & Kitchell, J. F. (1994). Crab: Snail size-structured interactions and salt marsh predation gradients. *Oecologia*, 97(1), 49–61.
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