

How changes in vegetation patterns on the salt marshes caused by tidal inundation and climate change may be affecting reproduction of the salt marsh snail, *Hydrobia ulvae*

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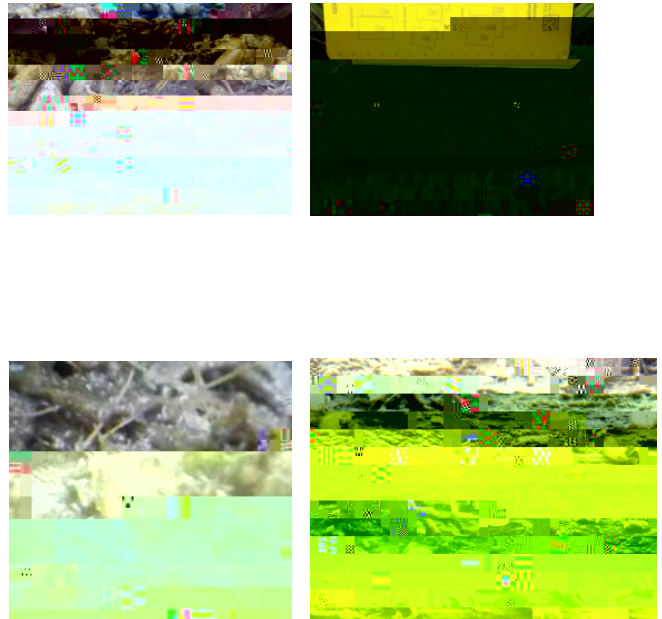
Abstract

The reproductive patterns of the salt marsh snail, *Hydrobia ulvae*, were examined at the Banca Marsh in Branford, Connecticut, during the summer of 2013. The focus of the study, was to determine if reproduction of *Hydrobia ulvae* has been influenced by climate change, tidal inundation, or possibly the decrease in *Spartina patens* vegetation patches. Statistical analysis shows that *Hydrobia ulvae* abundance among patch types is marginally significant, but the egg case abundance among patch types is not significant. The statistical analysis also shows that there is a significant difference in the number of eggs per egg case among patch types. More research on this topic is needed, but the findings of this project suggest that *Hydrobia ulvae* reproduction may be affected by changes occurring on salt marshes.

Introduction

Salt marshes and the various plant and animal species that reside in them have a significant role in the function of coastal ecosystems. These species may be impacted by climate change related alterations in salt marsh environments. Over the last decade, the changes caused by tidal inundation and erosion have become more apparent on Connecticut salt marshes. Tidal inundation and erosion have reduced the abundance of *Spartina patens*, the once dominant grass, which is causing the increases of short *Spartina patens* patches on salt marshes. One of the major questions is how resident species are responding to the various changes within salt marshes. One of the species that may be affected by the environmental changes is the salt marsh snail, *Hydrobia ulvae*.

Hydrobia ulvae (Fig. 1) is a



reproductive characteristics differ among various



~~fp~~ vegetation (Hausman, 1932). However, research at the Banca Marsh has shown that for the last

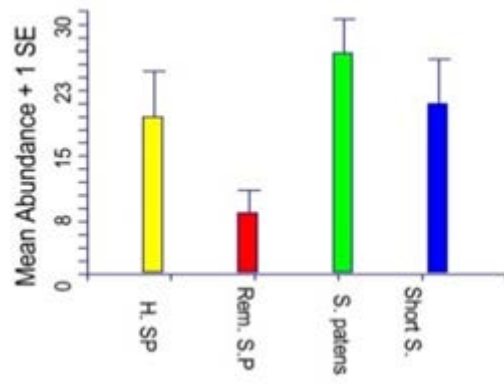


Figure 8. Mean