MURC | MULTIDISCIPLINARY UNDERGRADUATE RESEARCH CONFERENCE

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Presentation ID: 131
Presentation Format: Poster Presentation
Presentation Title: Relative Abundance of Mytilus edulis (invasive) and Mytilus trossulus (native) in Differing CO2 Concentrations of Vancouver Coastal Waters

Two species of blue mussels commonly coexist on Vancouver's coast: Mytilus edulis (invasive) and Mytilus trossulus, (native). Changes in their habitat, such as the predicted increase in water CO2 concentration, can impact their distribution, with the possibility of one species outcompeting the other. Such changes can drastically affect British Columbia's marine ecosystem. Multiple studies have linked increasing CO2 concentration with low fitness and shell dissolution in most mussel species, however, the effect on mussel interactions between the two species of interest remains largely unknown. This study aimed to measure the difference in relative abundance of M. trossulus and M. edulis at differing water CO2 concentration on two Vancouver beaches. DNA was isolated from the mantle tissue of the mussel, and used for polymerase chain reaction (PCR) and gel electrophoresis analysis to identify the phenotypically-identical species. A t-test was performed on the mean water CO2 measurements, resulting in a statistically significant difference between the two locations (p-value < 0.001), while a Fisher's test resulted in a statistically insignificant difference (p-value = 1.000) between the relative abundance of the two mussel species at the two sites. Findings suggest that the relative abundance of M. trossulus and M. edulis is unaffected by water CO2 concentration of the observed range. Consequently, native and invasive blue mussel species' relative distributions are likely to remain unaffected by a small-scale increase in carbon dioxide levels but more research is required to understand the effects of CO2 concentration outside of the observed range.

Themes:

Check (highlight) the most applicable theme according to the abstract.

☐ Innovation and Technology	☐ Health and Wellness	☐ Culture and Society	☐ Sustainability and Conservation

Comments: Great abstract. It is clear and includes all abstract components.