

## **Local adaptation to climate variation among marine invertebrate populations on Vancouver Islands' east and west coasts**

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The effects of global climate change on the distribution of species is a topic of growing interest. The overall response of a species to climate change partly depends on whether all members of the species have the same tolerance limit to climate stress or whether there is variation within the species, with some groups of individuals having evolved higher tolerance to climate stress than others. It is the goal of this research to determine if populations of marine species exhibit differences in tolerance limits to specific climate stressors. Populations of marine species on Vancouver Island inhabiting both east and west coasts were chosen for this study because they experience different climates and are likely to be genetically isolated from one another. Organisms were collected and exposed to increases in air temperature under controlled laboratory settings and resulting mortalities were recorded. Preliminary results show an emerging trend; east coast populations display higher tolerance limits (less mortality) to increased air temperature than west coast populations of the same species. The insight that not all populations of a species respond the same to climate conditions has the potential to change how we as scientists approach the study of species distribution under climate change.