Between a Rock and a Hard Place: Maine's Intertidal Communities

Maine’s rocky intertidal is home to many fascinating marine organisms that have evolved to survive constant buffeting and ravaging by ocean waves and debris. Over the last few decades these marine environments are becoming even less hospitable due to humans pumping more carbon into the atmosphere. Global warming is drastically reshaping and degrading these essential intertidal communities. Despite snails’ and barnacles’, for example, hard armor, it is unknown if these species will survive higher wave energies, ever increasing water temperatures, and ocean acidification. Questions must be answered regarding how such human-driven changes could alter the natural ecology of species living in these intriguingly diverse marine systems.

In this field-based program teachers will sample the number of snails, barnacles, and other intertidal species that are holding onto the rocky shelves, as well as measure abiotic variables to evaluate how ocean acidification and global warming are affecting the building and maintaining of Acadia National Park’s valuable marine communities. Teachers will distribute settling plates and ‘clod cards’ to record larval settlement and water flow patterns. Comparing abundance values of today with patterns from the past will allow teachers to estimate the effects of environmental change.

Most importantly, teachers will learn how to observe biological patterns and how to frame research hypothesis/questions. Upon gathering and analyzing data, teachers will be able to specifically address their own individual inquiry.

For further information and application see teacherprep.princeton.edu/professional-learning or contact Anne Catena at Princeton University.