

Oceanography Seminar

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“MARINE BENTHIC COMMUNITIES AS INDICATORS OF ENVIRONMENTAL HEALTH”

Humans have proven time and time again that they are capable of altering the environment in a variety of ways, almost always to the detriment of the habitats found there before. It is important to study these impacts in order to understand the extent of damages caused, both spatially and temporally, as well as prevent said damages as much as possible from current and future human activities. In the marine environment, nutrients and contaminants eventually make their way to the seafloor while many disturbances directly occur here. Macrobenthic infauna (animals found in the sediment $> 300 - 500 \mu\text{m}$) are intimately connected with the seafloor, somewhat long-lived, relatively immobile, and comprised of many taxa with different life histories and tolerances making them ideal indicators of environmental health. Human impacts often elicit a ‘toxicity vs. enrichment’ effect, wherein close proximity to disturbance will reduce both abundances and diversity due to high toxicity while intermediate distances will have reduced diversity but increased abundances as toxicity is somewhat reduced but enrichment allows for larger numbers of tolerant individuals. I will show how macrobenthos can be used to determine human impacts. In particular, I will focus on defining human disturbance to the marine environment in three scenarios: coastal development, deep-water oil spills, and deep-sea mining. The first two instances involve assessing damages after disturbances have occurred, while the third provides a rare opportunity to understand and possibly mitigate damages before they take place.

Thursday January 30th, 2020 3:00p.m. MSB 100