

Do variable quantitative food resources affect appendage regeneration of the brittle star *Ophiopholus aculeate*?

Energy allocation is important foundation for growth, reproduction, and survival. Food sources, which supply the energy to be allocated, may vary ecologically. Contributors such as, temperature, decaying matter, organics in the water, and current, may inhibit food intake ultimately affecting energy allocation for process such as regeneration. To observe the relationship between food availability and regeneration rates of the brittle star *Ophiopholus aculeata*, individuals were collected from Penobscot Bay, Castine, ME of fall 2012. Each brittle star had one appendage amputated and was haphazardly assigned a food treatment. Food treatments consisted of high, medium, and low amounts of food, simulating food availability in the field. It was found that food availability had no affect on brittle star appendage regeneration rates. Previous studies have provided a strong background of the costs and benefits of regeneration, however, they lack in the understanding of what influences the regeneration process. Further regeneration research, specifically what affects wound healing and development processes, could be significant to the human race and stem cell research.

Advisor: Alan Verde