

The feeding response of *Cucumaria frondosa* when exposed to microplastic

Cucumaria frondosa are passive suspension feeders that use their filtering tentacles to feed. Microplastics are increasing in abundance in aquatic environments and may influence *C. frondosa* feeding behavior. In this study, the feeding behavior of *Cucumaria frondosa* when exposed to varying amounts of microplastic was investigated. *C. frondosa* were subjected to four treatments, containing different ratios of microspheres to brine shrimp. Feeding behavior of was assessed by counting the number of tentacle insertions in the first and last 15 min of a 1.25 hr long feeding trial. Average proportion of tentacle insertions and expelled microsphere data were analyzed and no significant difference was found in the proportion of tentacle insertions between the four microsphere: brine shrimp treatments. Additionally, no significant difference was found in the number of expelled microspheres in the waste of *C. frondosa* between treatments. These data suggest that *C. frondosa* may selectively feed on particles.

Advisor: Ann Cleveland