

## **The use of green crabs (*Carcinus meanus*), hermit crabs (*Pagurus longicarpus*) and periwinkles (*Littorina littorea*) to control fouling communities in suspended oyster aquaculture**

The Growth of fouling communities in suspended oyster aquaculture is a hindrance to aquaculture projects around the world. This study looked at three species *Carcinus meanus*, *Pagurus longicarpus*, and *Littorina littorea* (compared to a control) and their effectiveness in controlling fouling communities on an oyster aquaculture site using a suspension method, on the Scarborough River located in Southern Maine, USA. Fouling can be defined as the colonization of marine organisms on a submerged substrate. Floating extruded plastic oyster grow out bags with 14mm mesh were suspended for a five month period from May 2012 through September 2012, with three replicates for each treatment. Bags were suspended using a non-conventional method using PVC pipe frames in which the bags were housed, separating each treatment. There were significant differences in the amount of fouling, but not composition of fouling on both bags and oyster shells between treatment groups. Green crabs were the most effective in mitigating the widest range (qualitatively and quantitatively) of fouling organisms. There was a significant difference in the lengths of oysters and percent growth in oysters between treatment groups. Oysters in the hermit crab treatment had the greatest length and percent growth. Mortality showed no significant difference between treatment groups. Findings in this study coincide with the findings of numerous biological control studies.

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