

Habitat Restoration in New Haven Harbor Utilizing Lab Cultured Oyster Sets and Reef Balls™

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Oyster reefs have been documented to provide valuable habitat structure and ecosystem services as well as socioeconomic benefits. Native reefs once dominated many estuaries ecologically and economically. Studies have shown depletion and degradation of oyster reefs worldwide. Successful restoration efforts have further demonstrated the value of oyster reefs to coastal ecosystems and communities.

Reef Ball™ Modules (RBM's) are designed to mimic natural bottom structure and are being used to address a variety of environmental concerns. Initial investigations suggest that these artificial forms may have far reaching effects in habitat and species restoration efforts including; designing and growing artificial reefs, coral propagation and planting systems, estuary restoration, mangrove plantings, erosion control, and oyster reef restoration.

Students and faculty at the Sound School built five Mini-Bay RBM's (width: 0.76m, height: 0.53m, weight: 91kg) using oyster shell as a cement additive. In May of 2018 the aquaculture laboratory at the school successfully spawned oysters. After the spawn three RBM's were placed in a set-tank with 200 micron spat. The RBM's soaked for ten days. In June 2018 the RBM's, three with set and two unseeded, were deployed in nearshore waters by the school campus. To date the three modules with oyster set have demonstrated successful oyster growth and survival over their entire surface while the unseeded modules have no oyster growth. A variety of crab and fish species were observed using the seeded RBM's. Oyster growth and species interactions continue to be monitored.