

Oyster Growth Study using Biorock® Accretion Technology

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Oyster growth and survival were followed for two years in populations of *Crassostrea virginica* grown in continuous flow-through tanks with and without Biorock direct current electrical stimulation, using bottom water pumped from the Hudson River next to mid-town Manhattan. Oysters exposed to the electrical current grew significantly faster than controls and had higher survival. Growth rates of electrically stimulated oysters were 2.75 and 1.62 times faster in length than controls in 2007 and in 2008 respectively, while mortality rates of un-charged control oysters were 2.08 and 1.36 times higher than those receiving electrical current. An increase in linear growth rate of 2 implies an 8 fold increase in weight. These results suggest that oyster reefs can be rapidly restored using Biorock electrical stimulation, through increased growth rates and higher survival from environmental stress episodes. Two hundred years ago New York City had 350 square miles (906.5 sq km) of oyster reefs, but now has effectively zero, with consequent loss of filtration and maintenance of marine water quality. Restoration of oyster reef and saltmarsh habitat is now being promoted by New York's Green Infrastructure Program, to reduce expenditures for drinking water and sewage treatment. Use of Biorock methods on a large-scale could bring back the oyster reefs with the fastest possible growth and survival.



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