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[Ocean Acidification Impacts Larval and Juvenile Growth in the Native Oyster *Ostrea lurida*](#)

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The impacts of ocean acidification have only recently been recognized as a human-induced stressor on marine ecosystems. Ocean acidification can disrupt calcification in organisms that precipitate calcareous structures, including many ecologically and economically important species. We examined how decreased levels of carbonate saturation affected larval and juvenile growth and settlement in the native oyster *Ostrea lurida*. Larvae were cultured at three carbonate saturation levels that represent present day CO₂ concentrations (380 ppm) and two future projected pCO₂ scenarios (540 and 970 ppm). These treatments were maintained for 20 days throughout larval duration until settlement

occurred. Larval and juvenile growth were determined by calculating change in shell area. Larvae exposed to 970 ppm grew 12% less than larvae held under control conditions (380 ppm). In addition, growth varied among larvae produced by different parents, suggesting that impacts of ocean acidification might vary intraspecifically. Juvenile growth (i.e., new shell added following settlement) was significantly different among CO₂ treatments, and juveniles exposed to 970 ppm grew 24% less than juveniles held under control conditions (380 ppm). Carry-over effects from the larval stage influence juvenile growth, and because post-settlement mortality is often high for marine invertebrates, ocean acidification may negatively impact the size of native oyster populations.

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